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PREVENTION OF INTRANASALLY INOCULATED ENCEPHALITIS (ST. LOUIS TYPE) IN MICE AND OF POLIOMYELITIS IN MONKEYS BY MEANS OF CHEMICALS INSTILLED INTO THE NOSTRILS

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Encouraging results in the prevention of intranasally inoculated encephalitis (St. Louis type) in mice by means of chemicals instilled into the nostrils have been reported by Armstrong (1), and Armstrong and Harrison (2, 3). Successful results were similarly produced against intranasally inoculated poliomyelitis in monkeys by Armstrong and Harrison (2, 3); Schultz and Gebhardt (4); and Sabin, Olitsky, and Cox (5).

Among chemicals found effective in preventing intranasal infection with the above-mentioned neurotropic viruses were several astringents, such as sodium aluminum sulphate (1, 2, 3, 5), picric acid (3, 4), and tannic acid (5).

We desire to report here certain findings which apparently exert a marked influence upon the effectiveness of picric acid solutions in preventing experimental intranasal infection by the above-mentioned viruses. Unpublished work by Armstrong indicates that the protection afforded mice against intranasal infection with encephalitis virus is not due, at least not in major part, to its antiseptic action, since, mixed with saline, buffered to pH 7.6, it exerted no marked viricidal effect. Sabin, Olitsky, and Cox (5) believe that the protection afforded by sodium alum is likewise not due to its viricidal action.

The local effects produced by astringents are usually attributed in large part to their ability to form precipitates with proteins; and since the acidity of the mixture is known to be an important factor in this reaction, it was deemed desirable to study this relationship *in vitro* and to attempt to correlate the findings with the protection obtained in animals.

METHODS

Solutions of picric acid in varying buffers (pH 8.6 to pH 1.4) were prepared by adding 1 part of a warm 2 percent picric acid in saline solution to 3 parts of the appropriate buffer, thus giving a 0.5 percent solution of picric acid.

The coagulating effect of the various buffered solutions was tested by placing 0.2 cc of the solution in small test tubes to which human

ascitic fluid or pooled human serum was slowly added with constant agitation. The appearance or nonappearance of a floccular precipitate was noted. The precipitate, if formed, was found to redissolve in excess of the protein-containing fluid. The amount of such fluid necessary to bring about resolution of the precipitate was recorded in each instance.

The results as shown in table 1 relate to human ascitic fluid, each recorded observation being the average of several trials. Results with blood serum were similar to those given for ascitic fluid, with the exception that it was necessary to add somewhat less serum than ascitic fluid to bring about resolution of any coagulum which formed.

The final hydrogen ion concentrations of the buffered picric acid solutions were determined by Senior Biophysicist Herbert Kahler by means of the glass electrode method.

TABLE 1.—*In vitro* studies of the protein-coagulating action of various chemical solutions

Chemical	Amount of chemical in test	Ascitic fluid added to produce flocculation	Ascitic fluid added to produce resolution of flocculi	Amount of N/10 NaOH to render 1 cc chemical alkaline to litmus	Electrically determined pH of solution
	Cc.	Cc.	Cc.	Cc.	
0.5 percent picric acid-buffered pH 8.6.....	0.2	0.01	0.08	0.17	¹ 1.90
0.5 percent picric acid-buffered pH 8.0.....	.2	(²)	(²)	.13	6.45
0.5 percent picric acid-buffered pH 7.0.....	.2	(²)	(²)	.26	5.42
0.5 percent picric acid-buffered pH 5.0.....	.2	.01	.18	.49	3.20
0.5 percent picric acid-buffered pH 4.4.....	.2	.01	.25	.63	2.93
0.5 percent picric acid-buffered pH 2.8.....	.2	.01	.45	.86	2.05
0.5 percent picric acid-buffered pH 1.4.....	.2	.01	.31	.80	1.30
0.5 percent picric acid in 0.85 percent saline.....	.2	.01	.14	.26	1.66
0.5 percent picric acid +0.5 percent sodium aluminum in 0.85 percent saline.....	.2	.01	.63	.77	1.90
0.5 percent sodium aluminum in 0.85 percent saline.....	.2	.04	.54	.50	3.62

¹ This H₃BO₃ KCl NaOH buffer was thrown out of its buffer range by the addition of picric acid.

² No flocculation.

Buffers alone occasioned no flocculation when mixed with ascitic fluid in the same proportions.

In vitro results.—It was found that the picric acid solutions in pH 8.0 and pH 7.0 buffers, which by the electrical method showed readings of pH 6.45 and pH 5.42, respectively, gave no precipitation when ascitic fluid or serum was added in any proportion, whereas in more acid ranges precipitation promptly occurred. The precipitates formed at the more acid ranges tended to be more copious and more difficult to redissolve than were those formed at a lower acidity. The buffer solutions alone occasioned no protein precipitation.

In vivo results.—Should the protective action of picric acid in animals be dependent upon its local protein coagulating effect, a difference should be apparent in mice and monkeys prepared with the buffered pH 7.0 solution, which occasioned no precipitation with proteins, as compared with those which received the more acid strongly flocculating solutions.

TABLE 2.—*Protection of mice against intranasally inoculated encephalitis virus (St. Louis type) by means of various chemical solutions previously instilled into their nostrils*

Solution intranasally instilled	Number of mice treated intranasally on specified date				Number of mice given 0.03 cc 1:430 dilution of virus intranasally, 6/12/36	Deaths by days following intranasal inoculations of virus														Percent of mice survived
	6/1/36	6/3/36	6/5/36	6/8/36		1	2	3	4	5	6	7	8	9	10	11	12	13	14	
0.5 percent picric acid in pH 8.6 buffer	35	35	35	35	35						1	1	1	1					31	91
0.5 percent picric acid in pH 7.0 buffer	35	35	35	35	34					8	11	4	1	1					9	26
0.5 percent picric acid in pH 5.0 buffer	35	35	35	35	35					1	1	1		1				31	89	
0.5 percent picric acid in pH 2.8 buffer	35	35	35	35	35	† 1					1		1				1	31	91	
0.5 percent picric acid in pH 1.4 buffer	35	35	35	35	34						1				2			31	91	
0.5 percent picric acid in 0.85 percent saline	35	33	33	33	32			† 1										31	100	
Nonprepared controls	35	35	35	35	35					6	17	1			2		1	8	23	

† Killed by cage door.

‡ Excluded from compilations as deaths were too early for encephalitis.

TABLE 3.—*Protection of mice against intranasally inoculated encephalitis virus (St. Louis type) by means of various chemical solutions previously instilled into their nostrils*

Solution intranasally instilled	Number of mice treated intranasally on specified date			Number of mice given 0.03 cc 1:430 dilution of virus intranasally, 7/1/36	Deaths by days following intranasal inoculation of virus													Number of mice survived	Percent of mice survived	
	6/24/36	6/25/36	6/26/36		1	2	3	4	5	6	7	8	9	10	11	12	13			14
0.5 percent picric acid in pH 8.6 buffer	35	35	35	35					1	6									28	80
pH 8.6 buffer	35	35	35	34	33					12	5	1	1						14	42
0.5 percent picric acid in pH 7.0 buffer	35	35	35	35	35					3	12	7	1	1					11	31
pH 7.0 buffer	35	35	35	35	35				1	13	6								15	43
0.5 percent picric acid in pH 4.4 buffer	35	35	35	34	34														34	100
pH 4.4 buffer	35	35	35	35	33					1	17	4	2						9	27
0.5 percent picric acid in pH 2.8 buffer	35	35	35	35	35							1					1		33	94
pH 2.8 buffer	35	35	35	35	35						6	1							28	80
0.5 percent picric acid in pH 1.4 buffer	36	36	36	36	36						3	1	2					2	32	89
pH 1.4 buffer	35	35	35	35	35						1		3	2					25	71
0.5 percent picric acid in 0.85 percent saline	35	35	35	34	34						3								31	91
Nonprepared controls	35	35	35	35	34					1	11	3	3			1			15	44

By reference to tables 2 and 4 it may be noted that the picric acid solution made with pH 7.0 buffer afforded slight, if any, protection, 26 percent of mice surviving, as compared with 23 percent for the controls, whereas with solutions buffered at a more acid level, from 89 to 100 percent of the mice survived. Similar results were found in monkeys.

TABLE 4.—*Preventive effect of chemicals in monkeys*

Experi- ment	Mon- key no.	Solution and date of intranasal injection (1.5 cc. each nostril)		Dates virus ad- ministered (1 cc. supernatant each nostril)	First day of fever	Day of death	Remarks
A		0.32 percent picric acid in 2-percent sodium aluminum.	(1935) Aug. 28, 30. Sept. 6, 10, 12, 14.	(1935) Sept. 18, 19, 20.			
	1005	-----	-----	-----	—	S	No symptoms
	1006	-----	-----	-----	—	S	Do.
	1007	-----	-----	-----	—	S	Do.
	1008	-----	-----	-----	—	S	Do.
		Controls. No chemicals intranasally.		Sept. 18, 19, 20.			
	996	-----	-----	-----	5	9	Poliomyelitis.
	997	-----	-----	-----	5	9	Do.
	998	-----	-----	-----	6	10	Do.
	999	-----	-----	-----	6	10	Do.
B		0.16 percent picric acid in 0.5-percent sodium aluminum.	Oct. 29, 31. Nov. 2, 4, 6, 8.	Nov. 12, 13, 14.			
	76	-----	-----	-----	—	S	No symptoms.
	77	-----	-----	-----	—	S	Do.
	78	-----	-----	-----	—	S	Do.
	79	-----	-----	-----	—	S	Do.
		Controls. No chemicals intranasally.		Nov. 12, 13, 14.			
	88	-----	-----	-----	4	7	Poliomyelitis.
	89	-----	-----	-----	—	8	No symptoms.
	90	-----	-----	-----	3	7	Poliomyelitis.
	91	-----	-----	-----	3	10	Do.

S=survived.

TABLE 4.—Preventive effect of chemicals in monkeys—Continued

Experiment	Monkey no.	Solution and date of intranasal injection (1.5 cc. each nostril)		Dates virus administered (1 cc. supernatant each nostril)	First day of fever	Day of death	Remarks
C		0.33 percent picric acid in 0.5-percent sodium aluminum.	(1936) Apr. 29. May 6, 13, 20, 29. June 3.	(1936) May 29 (a. m. and p. m.).			
	180				—	8	No symptoms.
	182				—	8	Do.
	184				—	8	Do.
	186			May 31 (a. m. and p. m.).	—	8	Do.
	188				—	8	Do.
	190				—	8	Do.
	197			June 2 (a. m. and p. m.).	—	8	Do.
	199				—	8	Do.
	201				—	8	Do.
		Controls. No chemicals intranasally.		May 29 (a. m. and p. m.).			
	192				3	7	Poliomyelitis.
	194				—	8	No symptoms.
	196				5	7	Poliomyelitis.
	198			May 31 (a. m. and p. m.).	—	8	No symptoms.
	200				4	8	Poliomyelitis.
	202				—	8	No symptoms.
	203			June 2 (a. m. and p. m.).	4	9	Poliomyelitis.
	204				4	8	Do.
	205				3	8	Do.
D		0.5 percent picric acid in 0.5-percent alum.	June 25, 27, 29. July 3, 10.	July 16 (a. m. and p. m.).			
	217				—	8	No symptoms.
	218				—	8	Do.
	219				—	8	Do.
		Controls. No chemicals intranasally.		July 16 (a. m. and p. m.).			
	220				4	8	Poliomyelitis.
	221				4	8	Do.
	222				3	8	Do.
		0.5-percent picric acid in pH 2.8 buffer.	June 25, 27, 29. July 3, 10.	July 16 (a. m. and p. m.).			
	214				—	8	No symptoms.
	215				—	8	Do.
	216				—	8	Do.
		0.5-percent picric acid in pH 7.0 buffer.	June 25, 27, 29. July 3, 10.	July 16 (a. m. and p. m.).			
	211				8	10	Poliomyelitis.
	212				5	9	Do.
	213				5	10	Do.

S=survived.

The increased protective action shown by more acid solutions of picric acid may, however, be due to their increased ability to coagulate proteins, to their increase in acidity itself, to the chemicals in the buffer, or to some combination of two or more of these factors. In the hope of elucidating this question, groups of mice were prepared by instilling into their nostrils 0.5 percent picric acid dissolved in buffer solutions ranging from pH 8.6 to pH 1.4, while similar control groups received nasal instillations of the various buffer solutions (3 parts diluted with saline 1 part) to which no picric acid had been added. By reference to table 3 it may be noted that the picric acid in acid buffers showed an increased protection over that shown by the corresponding buffer alone. This increased protection is especially marked with the pH 4.4 solutions, but less so for pH 2.8 and pH 1.4 mixtures. By reference to table 1 it may be noted that picric acid in solution tends to increase acidity, so that the identical solution without picric acid is no longer an adequate control for determining the effect of picric acid alone. In the case of buffers of pH 4.4 plus 0.5 percent picric acid, which protected 100 percent of the mice, it may be noted that the actual pH value was 2.93, or but slightly less acid than buffer pH 2.80, which protected 80 percent of the mice. If acidity were the sole important factor, the pH 2.80 buffer alone should have protected somewhat better. Again, the acidifying effect of picric acid is less apparent in more acid buffers. For instance, by adding 0.5 percent of picric acid to pH 1.4 buffer, its pH was reduced to only 1.3. Here again, however, the picric acid solution is more effective as a preventive than the buffer alone.

The buffers from pH 8.6 to 1.4 were made according to Clark (6) and, as noted in his text, the chemicals employed vary for different pH ranges both as to kinds and proportions. This leads one to feel that the pH values and not the chemicals *per se* are the important factors.

The series studied, however, is too meager to determine accurately the significance of the possible factors involved, but does indicate that buffer solutions of less acidity than pH 4.4 have of themselves little or no protective effect in mice, while at pH 2.80 and 1.40 the protection is considerable but scarcely sufficient to account for the full effect afforded by buffers plus picric acid. The prophylaxis afforded by picric acid solutions is, therefore, possibly, in part at least, dependent upon its protein-coagulating properties in acid mixtures.

If this assumption be true, acid solutions giving a prompt and copious flocculation of proteins should be the most effective preventives. By reference to table 1 it may be noted that, upon this assumption, 0.5 percent picric acid combined with 0.5 percent sodium aluminum sulphate in saline, or 0.5 percent picric acid in pH 4.4 to more acid buffers should be effective mixtures.

The picric-alum mixture, for instance, showing a pH value of 1.90, caused prompt coagulation with ascitic fluid, and the clot at its maximum was so firm that the tube could be inverted without spilling. Moreover, the coagulum was relatively difficult of resolution, a consideration with a possible bearing on the duration of protection.

Actual trials have shown that the picric-alum combinations are quite effective in protecting monkeys against intranasal infection with poliomyelitis virus, as was also 0.5 percent picric acid in pH 2.8 buffer. By reference to table 4 it may be noted that all of 20 monkeys prepared with the picric-alum mixtures and 3 prepared with 0.5 percent picric acid in pH 2.8 buffer survived without symptoms, while of 20 unprepared controls and 3 treated with the ineffective pH 7.0-0.5 percent picric acid, all died except 4.

Tests are now under way to determine the duration of protection afforded monkeys by these two preparations. The solution of 0.5 percent picric acid in 0.5 percent sodium aluminum sulphate was the one selected for trial as a control measure against poliomyelitis in certain southern States. The methods of preparation and directions for use of the solution are given at the end of this article.

SUMMARY

1. Solutions of picric acid buffered at a pH range which gave no coagulation of protein when mixed with ascitic fluid or serum afforded no protection when introduced repeatedly into the nostrils of mice and monkeys prior to intranasal inoculation with encephalitis or poliomyelitis virus, respectively.

2. Solutions of picric acid buffered in an acid range which permitted coagulation of protein afforded protection to both mice and monkeys.

3. Buffer solutions with an acidity of pH 2.80, or greater, of themselves exert a protective influence but to a less degree than is apparent by 0.5 percent picric acid solutions of approximately the same acidity.

4. Mixtures of picric acid with sodium aluminum sulphate in saline protected all of 20 monkeys against an infection which occasioned poliomyelitis in 16 of 20 nonprepared controls.

5. Solutions of 0.5 percent picric acid in pH 4.4 and more acid buffers were also very effective in mice and in a small group of monkeys.

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**PICRIC ACID-SODIUM ALUM NASAL SPRAY FOR EXPERIMENTAL
POLIOMYELITIS CONTROL**

FORMULA

Solution A.—Dissolve 1 gram of sodium alum (sodium aluminum sulphate C. P.) in 100 cc of physiological salt solution (0.85 percent). Turbidity may be removed by filtering one or more times through the same filter paper or Berkefeld filter.

Solution B.—Dissolve 1 gram of picric acid (C. P.) in 100 cc of physiological salt solution (0.85 percent). (Warming will facilitate solution.)

Mix equal amounts of solutions A and B. This gives a 0.5-percent solution of each ingredient, which is stable, and it is this mixture which is to be dispensed.

On the appearance of cases of poliomyelitis in the community, spray the nose thoroughly once daily on alternate days for 3 or 4 applications, then once weekly thereafter for the duration of the poliomyelitis season. The spray should be directed upward toward the top of the head.

NO SUBSTITUTES SHOULD BE USED

**REPORT ON MARKET-MILK SUPPLIES OF URBAN
COMMUNITIES**

Compliance of the Market-Milk Supplies of Urban Communities with the Grade A Pasteurized and Grade A Raw Milk Requirements of the Public Health Service Milk Ordinance and Code (as Shown by Ratings of 90 Percent or More Reported by the State Milk-Sanitation Authorities During the Period July 1, 1934, to June 30, 1936)

The accompanying list gives the sixth semiannual revision of the list of urban communities in which the pasteurized market milk is both produced and pasteurized in accordance with the Grade A pasteurized milk requirements of the Public Health Service Milk Ordinance and Code, and in which the raw market milk sold to the final consumer is produced in accordance with the Grade A raw milk requirements of said ordinance and code, as shown by ratings of 90 percent or more reported by State milk-sanitation authorities.

The primary reason for publishing such lists from time to time is to encourage the communities of the United States to attain and maintain a high level of excellence in the public-health control of milk supplies.

It is emphasized that the Public Health Service does not intend to imply that all communities not on the list are not provided with high-grade milk supplies. Some communities which have high-grade milk supplies are not included because arrangements have not been made for the determination of their ratings by the State milk-sanitation authority. In other cases, the ratings which have been determined are now more than 2 years old and have therefore lapsed.

The rules under which a community is included in this list are as follows:

(1) All ratings must have been determined by the State milk-sanitation authority in accordance with the Public Health Service

rating method, based upon the Grade A pasteurized milk and the Grade A raw milk requirements of the Public Health Service Milk Ordinance and Code.

(2) No community will be included in the list unless both its pasteurized milk and its raw milk ratings are 90 percent or more; provided that communities in which only raw milk is sold will be included if the raw milk ratings are 90 percent or more.

(3) The rating used will be the latest rating submitted to the Public Health Service, but no rating will be used which is more than 2 years old.

(4) Occasional surprise checks will be made of the rating methods used by the State, and discounts will be applied if State ratings are found to be more than 5 percent too high.

Communities are urgently advised to bring their ordinances up to date at least every 5 years, since ratings will be made on the basis of later editions if those adopted locally are more than 5 years old.

Communities which are not now on the list should request the State milk-sanitation authority to determine their ratings and, if necessary, improve their status sufficiently to merit inclusion in the list.

Communities which are now on the list should not permit their ratings to lapse, as ratings more than 2 years old cannot be used.

Communities which have not yet adopted the Public Health Service Milk Ordinance should give thoughtful consideration to the advisability of doing so. It is obviously easier to satisfy the requirements upon which the rating method is based if these are included in the local legislation.

Communities which are enforcing the Public Health Service Milk Ordinance, but which have not yet been admitted to the list, should determine whether this has been the result of failure to enforce the ordinance strictly or failure to bring the ordinance up to date.

State milk-sanitation authorities which are not now equipped to determine municipal ratings are urged, in fairness to their communities, to equip themselves as soon as possible. The personnel required is small, as in most States one milk specialist is sufficient for the work.

The inclusion of a community in this list means that the pasteurized milk sold in the community, if any, is of such a degree of excellence that the weighted average of the percentages of compliance with the various items of sanitation required for Grade A pasteurized milk is 90 percent or more, and that, similarly, the raw milk sold in the community, if any, so nearly meets the requirements that the weighted average of the percentages of compliance with the various items of sanitation required for Grade A raw milk is 90 percent or more. However, high grade pasteurized milk is safer than high grade raw milk, because of the added protection of pasteurization. To secure this added protection, those who are dependent on raw milk can pasteurize

the milk at home in the following simple manner: Place the milk in an aluminum vessel on a hot flame and heat to 155° F., stirring constantly; then immediately set the vessel in cold water and continue stirring until cool.

TABLE 1.—Communities in which all market milk is pasteurized. In these communities market milk complies with the Grade A pasteurized milk requirements of the Public Health Service Milk Ordinance and Code to the extent shown by pasteurized milk ratings of 90 percent or more

Community	Percentage of milk pasteurized	Date of rating
MINNESOTA		
Winona.....	100	Sept. 14, 1934
NORTH CAROLINA		
Princeville.....	100	Apr. 18, 1935
Tarboro.....	100	Do.

TABLE 2.—Communities in which some market milk is pasteurized. In these communities the pasteurized market milk complies with the Grade A pasteurized milk requirements and the raw market milk complies with the Grade A raw-milk requirements of the Public Health Service Milk Ordinance and Code to the extent shown by pasteurized and raw-milk ratings, respectively, of 90 percent or more

[NOTE.—All milk should be pasteurized or boiled before it is consumed, either commercially or at home. See text for home method.]

Community	Percentage of milk pasteurized	Date of rating	Community	Percentage of milk pasteurized	Date of rating
ALABAMA			MISSISSIPPI		
Tuscaloosa.....	77	Dec. 13, 1935.	Greenville.....	26	Aug. 29, 1935.
ARIZONA			McComb.....	8	Jan. 9, 1936.
Flagstaff.....	32	February 1935.	Vicksburg.....	41	June 20, 1935.
Tucson.....	85	June 21, 1935.	MISSOURI		
Yuma.....	39	June 14, 1935.	Columbia.....	41	Mar. 3, 1936.
ARKANSAS			Hannibal.....	31	May 29, 1936.
Little Rock.....	19	Dec. 15, 1935.	Jefferson City.....	49	Nov. 22, 1935.
Pine Bluff.....	32	June 1936.	Moberly.....	49	May 1, 1936.
Texarkana.....	18	Feb. 20, 1936.	St. Joseph.....	31	Aug. 9, 1935.
KANSAS			Sedalia.....	20	Apr. 10, 1936.
Junction City.....	31	June 1936	NEW MEXICO		
Lawrence.....	48	May 1936.	Las Cruces.....	53	Nov. 13, 1935.
Topeka.....	59	Do.	NORTH CAROLINA		
Wichita.....	58	December 1935.	Charlotte.....	19	Dec. 15, 1934.
KENTUCKY			Durham.....	83	Dec. 14, 1934.
Ashland.....	86	June 1936.	Fayetteville.....	50	Mar. 28, 1935.
Bowling Green.....	37	May 1936.	Greensboro.....	62	Nov. 24, 1934.
Glasgow.....	62	Do.	Kinston.....	16	Apr. 10, 1936.
Henderson.....	34	Do.	Morehead City.....	58	Dec. 14, 1935.
Louisville.....	96	March 1936.	Rocky Mount.....	20	Sept. 12, 1934.
MINNESOTA			Winston-Salem.....	46	Nov. 11, 1934.
Little Falls.....	55	Oct. 23, 1935.	OKLAHOMA		
			Bartlesville.....	32	Mar. 20, 1936.
			Blackwell.....	48	June 3, 1936.
			Muskogee.....	59	January 1936.
			Oklahoma City.....	70	December 1935.
			Tulsa.....	73	January 1936.

TABLE 2.—Communities in which some market milk is pasteurized. In these communities the pasteurized market milk complies with the Grade A pasteurized milk requirements and the raw market milk complies with the Grade A raw-milk requirements of the Public Health Service Milk Ordinance and Code to the extent shown by pasteurized and raw-milk ratings, respectively, of 90 percent or more—
Continued

Community	Per-centage of milk pas-teur-ized	Date of rating	Community	Per-centage of milk pas-teur-ized	Date of rating
OREGON			TEXAS—continued		
Portland.....	76	October 1934.	Kerrville.....	72	May 8, 1936.
TENNESSEE			Laredo.....	39	December 1935.
Bristol.....	48	May 8, 1935.	Livingston.....	20	March 1936.
Clarksville.....	42	Apr. 26, 1935.	Lubbock.....	32	July 10, 1935.
Memphis.....	80	May 29, 1935.	Midland.....	31	May 6, 1936.
Union City.....	32	Sept. 28, 1934.	Port Arthur.....	38	June 1936.
TEXAS			San Angelo.....	58	Apr. 8, 1936.
Abilene.....	70	Aug. 7, 1935.	San Antonio.....	64	September 1935.
Amarillo.....	61	June 29, 1935.	Seguin.....	5	March 1936.
Austin.....	35	Dec. 19, 1935.	Sherman.....	21	Dec. 21, 1934.
Ballinger.....	50	Mar. 2, 1936.	Sweetwater.....	56	June 23, 1936.
Beaumont.....	57	June 1936.	Texarkana.....	20	May 1935.
Big Spring.....	27	Aug. 5, 1935.	Tyler.....	60	January 1936.
Brownwood.....	17	June 26, 1936.	Victoria.....	13	February 1936.
Corsicana.....	4	Mar. 26, 1935.	Waco.....	31	Sept. 20, 1935.
Dallas.....	73	Dec. 7, 1935.	Wichita Falls.....	79	May 26, 1936.
Denton.....	64	Mar. 4, 1936.	VIRGINIA		
El Paso.....	71	July 31, 1935.	Bristol.....	48	May 8, 1935.
Fort Worth.....	83	Feb. 23, 1935.	WASHINGTON		
Gainesville.....	46	Sept. 6, 1935.	Camas.....	10	September 1934.
Houston.....	83	October 1935.	Vancouver.....	24	Do.

TABLE 3.—Communities in which no market milk is pasteurized, but in which the raw market milk complies with the Grade A raw-milk requirements of the Public Health Service Milk Ordinance and Code to the extent shown by raw-milk ratings of 90 percent or more

[NOTE.—All milk should be pasteurized or boiled before it is consumed, either commercially or at home. See text for home method]

Community	Date of rating	Community	Date of rating
ALABAMA		MISSOURI	
Demopolis.....	Nov. 22, 1935.	Ash Grove.....	Aug. 16, 1935.
Scottsboro.....	Dec. 31, 1935.	NEW MEXICO	
Stevenson.....	Do.	Clayton.....	June 20, 1935.
Sylacauga.....	Dec. 6, 1935.	Deming.....	Mar. 26, 1935.
Talladega.....	Do.	NORTH CAROLINA	
York.....	Nov. 20, 1935.	Angier.....	May 18, 1936.
KANSAS		Cary.....	Apr. 23, 1936.
Horton.....	Dec. 4, 1934.	Coats.....	May 18, 1936.
Sabetha.....	Sept. 27, 1935.	Dunn.....	Do.
KENTUCKY		Elkin.....	Sept. 12, 1934.
Leitchfield.....	June 1935.	Erwin.....	May 18, 1936.
MISSISSIPPI		Fairmont.....	May 28, 1936.
Brookhaven.....	May 17, 1935.	Hamlet.....	Aug. 28, 1934.
Durant.....	May 13, 1935.	Hertford.....	June 25, 1936.
Lexington.....	Do.	Hope Mills.....	Sept. 6, 1934.
Magnolia.....	Jan. 10, 1936.	Lumberton.....	May 28, 1936.
Ocean Springs.....	Sept. 5, 1935.	Monroe.....	Oct. 24, 1934.
Pascagoula.....	Do.	Mount Airy.....	Sept. 12, 1934.
Picayune.....	June 5, 1935.	New Bern.....	Dec. 12, 1935.
Yazoo City.....	May 14, 1935.	Pinehurst.....	Dec. 15, 1934.
		Rae ford.....	May 29, 1936.
		Red Springs.....	May 28, 1936.

TABLE 3.—Communities in which no market milk is pasteurized, but in which the raw market milk complies with the Grade A raw-milk requirements of the Public Health Service Milk Ordinance and Code to the extent shown by raw-milk ratings of 90 percent or more—Continued

Community	Date of rating	Community	Date of rating
NORTH CAROLINA—continued		TEXAS	
Roanoke Rapids.....	Apr. 6, 1936.	Brenham.....	June 11, 1936
Rockingham.....	Aug. 29, 1934.	Bryan.....	May 1936.
Southern Pines.....	Aug. 31, 1934.	Canyon.....	Apr. 13, 1936.
Southport.....	Oct. 2, 1935.	Childress.....	Apr. 17, 1936.
Statesville.....	Mar. 27, 1935.	Colorado.....	July 19, 1935.
Sylva.....	Sept. 23, 1935.	Commerce.....	Apr. 24, 1936.
Washington.....	Sept. 26, 1935.	Crockett.....	May 1936.
Williamston.....	June 25, 1936.	Del Rio.....	June 12, 1936.
Windsor.....	Apr. 8, 1936.	Jacksonville.....	January 1936
TENNESSEE			
Alcoa.....	July 3, 1935.		
Dyersburg.....	October 1934.		

EXTENT OF RURAL HEALTH SERVICE IN THE UNITED STATES, DECEMBER 31, 1931, TO DECEMBER 31, 1935

During the year 1935 data concerning the extent of rural health service were again obtained by the United States Public Health Service from State departments of health. This information has been compiled in table 1, wherein are shown, by States, the counties, townships, or districts in which the rural sections thereof were provided with health service under the administration of whole-time local health officers. The data are presented, as of December 31, for the years 1931 to 1935, inclusive.

In the list for the year ended December 31, 1935, there are included all counties, townships, or districts which were operated in units directed by whole-time local health officers and maintained by the pooling of local appropriations from official sources. Counties, townships, or districts with whole-time health organizations maintained entirely by State departments of health are also included in table 1.

TABLE 1.—Counties, townships, or districts in the United States in which rural sections were provided with health service under whole-time health officers each year from 1931 to 1935, as of Dec. 31

ALABAMA

1931	1932	1933	1934	1935
Baldwin	Baldwin	Barbour	Autauga	Autauga
Barbour	Barbour	Blount	Barbour	Baldwin
Blount	Blount	Bullock	Blount	Barbour
Bullock	Bullock	Calhoun	Bullock	Blount
Calhoun	Calhoun	Chambers	Calhoun	Bullock
Chambers	Chambers	Cherokee	Chambers	Calhoun
Cherokee	Cherokee	Cleburne	Cherokee	Chambers
Choctaw	Choctaw	Conecuh	Cleburne	Cherokee
Clarke	Clarke	Covington	Colbert	Chilton
Cleburne	Cleburne	Crenshaw	Conecuh	Cleburne
Coffee	Coffee	Cullman	Covington	Coffee
Colbert	Colbert	Dale	Crenshaw	Colbert
Conecuh	Conecuh	Dallas	Cullman	Conecuh
Covington	Covington	De Kalb	Dale	Cocoa
Crenshaw	Crenshaw	Elmore	Dallas	Covington

TABLE 1.—Counties, townships, or districts in the United States in which rural sections were provided with health service under whole-time health officers each year from 1931 to 1935, as of Dec. 31—Continued

1931	1932	1933	1934	1935
Cullman Dale Dallas De Kalb Elmore Escambia Etowah Franklin Geneva Houston Jackson Jefferson Lamar Lauderdale Lawrence Lee Limestone Lowndes Macon Madison Marengo Marion Marshall - Mobile Monroe Montgomery Morgan Perry Pickens Pike Shelby Sumter Talladega Tallapoosa Tuscaloosa Walker Washington Wilcox Winston	Cullman Dale Dallas De Kalb Elmore Escambia Etowah Franklin Geneva Houston Jackson Jefferson Lamar Lauderdale Lawrence Lee Limestone Lowndes Macon Madison Marengo Marion Marshall Mobile Monroe Montgomery Morgan Perry Pickens Pike Shelby Sumter Talladega Tallapoosa Tuscaloosa Walker Washington Wilcox Winston	Escambia Etowah Franklin Geneva Houston Jackson Jefferson Lauderdale Lawrence Lee Limestone Macon Madison Marengo Marion Marshall Mobile Monroe Montgomery Morgan Perry Pickens Pike Shelby Sumter Talladega Tallapoosa Tuscaloosa Walker Washington Wilcox	Elmore Escambia Etowah Franklin Houston Jackson Jefferson Lamar Lauderdale Lawrence Lee Limestone Lowndes Macon Madison Marengo Marion Marshall Mobile Monroe Montgomery Morgan Perry Pickens Pike Russell Shelby Sumter Talladega Tallapoosa Tuscaloosa Walker Washington Wilcox Winston	Crenshaw Cullman Dale Dallas De Kalb Elmore Escambia Etowah Franklin Houston Jackson Jefferson Lamar Lauderdale Lawrence Lee Limestone Lowndes Macon Madison Marengo Marion Marshall Mobile Monroe Montgomery Morgan Perry Pickens Pike Randolph Russell Shelby Sumter Talladega Tallapoosa Tuscaloosa Walker Washington Wilcox Winston

ARIZONA

Cochise Gila Maricopa Pima Yuma	Cochise Gila Maricopa Pima	Cochise Gila Maricopa Pima	Cochise Gila Maricopa Pima	Cochise Gila Maricopa Pima
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ARKANSAS

Arkansas ¹ Ashley Bradley Clark Clebume Conway Crittenden Cross Desh Drew Garland Jackson Jefferson Little River Lonoke ¹ Miller Mississippi Monroe Ouachita Perry Phillips Pope Prairie ¹	Arkansas ¹ Ashley Bradley Chicot Clark Cleveland Conway Crittenden Cross Drew Garland Jackson Jefferson Lincoln Little River Lonoke ¹ Mississippi Monroe Ouachita Phillips Pope Prairie ¹ Pulaski	Ashley Clark Conway Crittenden Cross Faulkner Garland Jackson Jefferson Little River Lonoke Mississippi Monroe Ouachita Phillips Pope Pulaski Saline Sebastian Woodruff Yell	Ashley Clark Conway Crittenden Cross Garland Jackson Jefferson Little River Mississippi Monroe Ouachita Phillips Pope Pulaski Saline Sebastian Woodruff Yell	Ashley Benton ¹ Clark Crawford ¹ Crittenden Garland Jackson Jefferson Little River Mississippi Ouachita Phillips Pope Pulaski Saline Sebastian Washington ¹ Woodruff Yell
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¹ 1 district of 3 counties.

TABLE 1.—Counties, townships, or districts in the United States in which rural sections were provided with health service under whole-time health officers each year from 1931 to 1935, as of Dec. 31—Continued

ARKANSAS—Continued

1931	1932	1933	1934	1935
Pulaski Saline Sebastian Union White Woodruff Yell	Saline Sebastian Woodruff Yell			

CALIFORNIA

Contra Costa Imperial Los Angeles Madera Monterey Orange Riverside San Bernardino San Diego San Joaquin San Luis Obispo Santa Barbara Stanislaus Yolo	Contra Costa Imperial Los Angeles Madera Monterey Orange Riverside San Bernardino San Diego San Joaquin San Luis Obispo Santa Barbara Stanislaus Yolo	Contra Costa Imperial Los Angeles Madera Monterey Orange Riverside San Bernardino San Diego San Joaquin San Luis Obispo Santa Barbara Stanislaus	Alameda Contra Costa Imperial Los Angeles Madera Monterey Orange Riverside San Bernardino San Diego San Joaquin San Luis Obispo San Mateo Santa Barbara Stanislaus	Alameda Contra Costa Fresno Imperial Los Angeles Madera Monterey Orange Riverside San Bernardino San Diego San Joaquin San Luis Obispo San Mateo Santa Barbara Stanislaus
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COLORADO

Otero				
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CONNECTICUT

Fairfield ¹	Fairfield ² West Hartford ³	Fairfield ³ West Hartford ³	Fairfield ³ West Hartford ³	
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¹ Included in 1 district of 3 counties.

DELAWARE

Kent New Castle Sussex	Kent New Castle Sussex	Kent New Castle Sussex	Kent New Castle Sussex	Kent New Castle Sussex
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FLORIDA

Leon Taylor	Escambia Leon Taylor	Escambia Leon	Escambia Leon	Escambia Jackson Leon
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GEORGIA

Baldwin Bartow Bibb Brooks Catoosa ¹ Chatham Chattooga ² Clarke Cobb Coffee Colquitt Dade ³	Baldwin Bartow Bibb Brooks Catoosa ³ Chatham Clarke Cobb Colquitt Dade ³ Decatur De Kalb	Baldwin Bartow Bibb Brooks Catoosa ⁴ Chatham Clarke Cobb Colquitt Decatur De Kalb Dougherty	Baldwin Bartow Bibb Camden ³ Catoosa ⁴ Chatham Clarke Cobb Colquitt Decatur De Kalb Dougherty	Baldwin Bartow Bibb Camden ³ Catoosa ⁴ Chatham Clarke Cobb Colquitt Decatur De Kalb Dougherty
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¹ Included in 1 district of 4 counties.

² Included in 1 district of 3 counties.

³ Included in 1 district of 2 counties.

TABLE 1.—Counties, townships, or districts in the United States in which rural sections were provided with health service under whole-time health officers each year from 1931 to 1935, as of Dec. 31—Continued

GEORGIA—Continued

1931	1932	1933	1934	1935
Decatur De Kalb Dougherty Floyd Glynn Gordon ¹ Grady Hall Jefferson Jenkins Laurens Lowndes Mitchell Murray ¹ Richmond Spalding Sumter Thomas Troup Walker ^{2,3} Ware Washington Whitfield ¹	Dougherty Floyd Fulton Glynn Grady Hall Jefferson Jenkins Laurens Lowndes Mitchell Richmond Spalding Sumter Thomas Walker ³ Ware Washington	Floyd Fulton Glynn ³ Grady Hall Jefferson Jenkins Laurens Lowndes Lowndes Mitchell Richmond Spalding Sumter Thomas Troup Walker ⁴ Ware Washington	Floyd Glynn ³ Grady Hall Jefferson Jenkins Laurens Lowndes Mitchell McIntosh ³ Richmond Spalding Sumter Thomas Troup Walker ⁴ Ware Washington	Floyd Fulton Glynn ³ Grady Hall Jefferson Jenkins Laurens Lowndes Lowndes Mitchell McIntosh ³ Richmond Spalding Sumter Thomas Troup Walker ⁴ Ware Washington

¹ Included in 1 district of 4 counties.

² Included in 1 district of 3 counties.

³ Walker County also included in a tricity district.

⁴ Included in 1 district of 2 counties.

IDAHO

Twin Falls	Twin Falls			
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ILLINOIS

Du Page	Du Page	Du Page	Du Page	
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IOWA

Des Moines Washington Woodbury	Des Moines Washington Woodbury	Woodbury	Woodbury	Woodbury
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KANSAS

Brown Butler Cherokee Dickinson Geary Greenwood Lyon Marion Sedgwick Shawnee	Brown Geary Lyon Marion Sedgwick Shawnee	Geary Lyon Sedgwick Shawnee	Lyon Sedgwick Shawnee	Lyon Sedgwick Shawnee
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KENTUCKY

Adair Allen Anderson Barren Bath Bell Boyd Breathitt Bullitt Butler	Adair Allen Anderson Barren Bath Bell Boyd Breathitt Bullitt Butler	Adair Allen Anderson Barren Bath Bell Boyd Breathitt Bullitt Butler	Adair Allen Anderson Barren Bath Boyd Breathitt Butler Caldwell Calloway	Adair Allen Anderson Ballard Barren Bath Bell Boyd Breathitt Butler
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TABLE 1.—Counties, townships, or districts in the United States in which rural sections were provided with health service under whole-time health officers each year from 1931 to 1935, as of Dec. 31—Continued

KENTUCKY—Continued

1931	1932	1933	1934	1935
Caldwell	Caldwell	Caldwell	Carlisle	Caldwell
Calloway	Calloway	Calloway	Carter	Calloway
Carlisle	Carlisle	Carlisle	Casey	Carlisle
Carter	Carter	Carter	Clinton	Carter
Casey	Casey	Casey	Edmonson	Casey
Clinton	Clinton	Clinton	Elliott	Clay
Daviess	Daviess	Daviess	Estill	Clinton
Edmonson	Edmonson	Edmonson	Fayette	Edmonson
Elliott	Elliott	Elliott	Fleming	Elliott
Estill	Estill	Estill	Floyd	Estill
Fayette	Fayette	Fayette	Fulton	Fayette
Fleming	Fleming	Fleming	Gallatin	Fleming
Floyd	Floyd	Floyd	Grant	Floyd
Fulton	Fulton	Fulton	Grayson	Fulton
Gallatin	Gallatin	Gallatin	Green	Gallatin
Grant	Grant	Grant	Greenup	Grant
Grayson	Grayson	Grayson	Hart	Grayson
Green	Green	Green	Henderson	Green
Greenup	Greenup	Greenup	Hickman	Greenup
Hancock	Hancock	Hart	Hopkins	Hart
Harrison	Hart	Henderson	Jackson	Henderson
Hart	Henderson	Hickman	Jefferson	Hickman
Henderson	Hickman	Hopkins	Kenton	Hopkins
Hickman	Hopkins	Jackson	Knott	Jefferson
Hopkins	Jackson	Jefferson	Knox	Kenton
Jackson	Jefferson	Kenton	Laurel	Knott
Jefferson	Kenton	Knott	Lawrence	Knox
Kenton	Knott	Knox	Lee	Laurel
Knott	Knox	Laurel	Leslie	Lawrence
Knox	Laurel	Lawrence	Letcher	Lee
Laurel	Lawrence	Lee	Lincoln	Leslie
Lawrence	Lee	Leslie	Madison	Letcher
Lee	Leslie	Letcher	Marshall	Lincoln
Leslie	Letcher	Lincoln	Martin	Lyon
Letcher	Lewis	Madison	Mason	Madison
Lewis	Lincoln	Magoffin	McCreary	Magoffin
Lincoln	McCreary	Marshall	McLean	Marshall
McCreary	McLean	Martin	Meade	Martin
McLean	Madison	Mason	Menifee	McCracken
Madison	Magoffin	McCreary	Metcalfe	McCreary
Magoffin	Marshall	McLean	Monroe	McLean
Marshall	Martin	Meade	Muhlenberg	Meade
Martin	Mason	Menifee	Nicholas	Menifee
Mason	Meade	Monroe	Ohio	Metcalfe
Meade	Menifee	Muhlenberg	Owsley	Monroe
Menifee	Metcalfe	Nicholas	Perry	Muhlenberg
Metcalfe	Monroe	Ohio	Pike	Nicholas
Monroe	Morgan	Owsley	Powell	Ohio
Morgan	Muhlenberg	Perry	Pulaski	Owsley
Muhlenberg	Nicholas	Pike	Rockcastle	Perry
Nicholas	Ohio	Powell	Rowan	Pike
Ohio	Owsley	Pulaski	Scott	Powell
Owen	Perry	Rockcastle	Todd	Pulaski
Owsley	Pike	Rowan	Trigg	Rockcastle
Perry	Powell	Scott	Trimble	Rowan
Pike	Pulaski	Todd	Union	Scott
Powell	Robertson	Trigg	Warren	Spencer
Pulaski	Rockcastle	Trimble	Wayne	Todd
Robertson	Rowan	Union	Webster	Trigg
Rockcastle	Scott	Warren	Wolfe	Trimble
Rowan	Todd	Wayne		Union
Scott	Trigg	Webster		Warren
Todd	Trimble	Wolfe		Wayne
Trigg	Union			Webster
Trimble	Warren			Wolfe
Union	Wayne			
Warren	Webster			
Wayne	Whitley			
Webster	Wolfe			
Whitley				
Wolfe				

TABLE 1.—Counties, townships, or districts in the United States in which rural sections were provided with health service under whole-time health officers each year from 1931 to 1935, as of Dec. 31—Continued

LOUISIANA¹

1931	1932	1933	1934	1935
Assumption	Assumption	Assumption	Assumption	Acadia
Avoyelles	Avoyelles	Avoyelles	Avoyelles	Assumption
Caddo	Caddo	Caddo	Caddo	Avoyelles
Caldwell	Caldwell	Caldwell	Caldwell	Caddo
Catahoula	Catahoula	Catahoula	Catahoula	Caldwell
Claiborne	Claiborne	Claiborne	Claiborne	Catahoula
Concordia	Concordia	Concordia	Concordia	Claiborne
De Soto	De Soto	De Soto	De Soto	Concordia
East Carroll	East Carroll	East Carroll	East Carroll	De Soto
Evangeline	Franklin	Franklin	Franklin	East Carroll
Franklin	Iberia	Iberia	Iberia	Franklin
Iberia	Iberville	Iberville	Iberville	Iberia
Iberville	Lafayette	Lafayette	Lafayette	Iberville
Lafayette	Lafourche	Lafourche	Lafourche	Jefferson Davis
Lafourche	La Salle	La Salle	La Salle	Lafayette
La Salle	Lincoln	Lincoln	Lincoln	Lafourche
Lincoln	Madison	Madison	Madison	La Salle
Madison	Morehouse	Morehouse	Morehouse	Lincoln
Morehouse	Natchitoches	Natchitoches	Natchitoches	Madison
Natchitoches	Ouachita	Ouachita	Ouachita	Morehouse
Ouachita	Pointe Coupee	Pointe Coupee	Pointe Coupee	Natchitoches
Pointe Coupee	Rapides	Rapides	Rapides	Ouachita
Rapides	Richland	Richland	Red River	Pointe Coupee
Richland	St. Landry	St. Landry	Richland	Rapides
St. Landry	St. Martin	St. Martin	St. Landry	Red River
St. Martin	St. Mary	St. Mary	St. Martin	Richland
St. Mary	Tensas	Tensas	St. Mary	St. Landry
Tensas	Terrebonne	Terrebonne	Tensas	St. Martin
Terrebonne	Washington	Washington	Terrebonne	St. Mary
Washington	Webster	Webster	Washington	Tensas
Webster	West Carroll	West Carroll	Webster	Terrebonne
West Carroll			West Carroll	Washington
				Webster
				West Carroll

¹ Parishes.

MAINE

Bar Harbor	Bar Harbor	Bar Harbor	Bar Harbor	Cooperative
Bucksport	Cooperative Health	Cooperative Health	Cooperative Health	Health Union ¹
Cooperative Health	Union ¹	Union ¹	Union ¹	Motbov Union ¹
Union ¹	Motbov Union ¹	Motbov Union ¹	Motbov Union ¹	
Motbov Union ¹	Rumford ²	Rumford ²	Rumford ²	
Rumford ²	Sanford ²	Sanford ²	Sanford ²	
Sanford ²				

² Including municipalities of Orono, Milford, Bradley, Veazie and Old Town.³ Town (township) wholly or partly rural.⁴ Including towns of Avon, Chesterville, Eustis, Livermore, Phillips, Rangeley, Strong, Temple, Weld, and Wilton.⁵ Including towns of Avon, Chesterville, Dallas Pl., Eustis, Farmington, Industry, Livermore, Lang Pl., New Sharon, Rangeley, Sandy River Pl., Strong, Temple, and Weld. (Farmington, Industry, Dallas Pl., New Sharon added in 1934.)⁶ Including towns of Avon, Carthage, Chesterville, Coplin Pl., Dallas Pl., Dead River, Eustis, Farmington, Flagstaff, Industry, Livermore, Lang Pl., New Sharon, New Vineyard, Phillips (in winter) Rangeley, Sandy River Pl., Strong, Salem, Temple, and Weld.

MARYLAND

Allegany	Allegany	Allegany	Allegany	Allegany
Anne Arundel	Anne Arundel	Anne Arundel	Anne Arundel	Anne Arundel
Baltimore	Baltimore	Baltimore	Baltimore	Baltimore
Calvert	Calvert	Calvert	Calvert	Calvert
Carroll	Carroll	Carroll	Caroline	Caroline
Cecil	Cecil	Cecil	Carroll	Carroll
Dorchester	Charles	Charles	Cecil	Cecil
Frederick	Dorchester	Dorchester	Charles	Charles
Garrett	Frederick	Frederick	Dorchester	Dorchester
Harford	Garrett	Garrett	Frederick	Frederick
Kent	Harford	Harford	Garrett	Garrett
Montgomery	Howard	Howard	Harford	Harford
Prince Georges	Kent	Kent	Howard	Howard
Queen Annes	Montgomery	Montgomery	Kent	Kent

TABLE 1.—Counties, townships, or districts in the United States in which rural sections were provided with health service under whole-time health officers each year from 1931 to 1935, as of Dec. 31—Continued

MARYLAND—Continued

1931	1932	1933	1934	1935
Talbot Washington Wicomico Worcester	Prince Georges Queen Annes Somerset Talbot Washington Wicomico Worcester	Prince Georges Queen Annes St. Marys Somerset Talbot Washington Wicomico Worcester	Montgomery Prince Georges Queen Annes St. Marys Somerset Talbot Washington Wicomico Worcester	Montgomery Prince Georges Queen Annes St. Marys Somerset Talbot Washington Wicomico Worcester

MASSACHUSETTS

Barnstable Nashoba Southern Berkshire	Barnstable Nashoba ¹ Southern Berkshire ²	Barnstable Nashoba ¹ Southern Berkshire ²	Barnstable Nashoba ¹ Southern Berkshire ²	Barnstable Nashoba ¹ Southern Berkshire ²
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¹ Represents 11 towns.

² Represents 9 towns.

MICHIGAN

Alcona ³ Alpena ³ Antrim ³ Barry Charlevoix ³ Cheboygan ³ Crawford ³ Emmet ³ Genesee Iosco ³ Isabella Kalkaska ³ Kent Midland Missaukee ³ Montmorency ³ Oakland Ogemaw ³ Oscoda ³ Otsego ³ Ottawa Presque Isle ³ Roscommon ³ Saginaw Wexford	Alcona ³ Allegan Alpena ³ Antrim ³ Barry Charlevoix ³ Cheboygan ³ Crawford ³ Emmet ³ Genesee Iosco ³ Isabella Kalkaska ³ Kent Lake ⁴ Midland Missaukee ³ Montmorency ³ Newaygo ⁴ Oakland Oceana ⁴ Ogemaw ³ Oscoda ³ Otsego ³ Ottawa Presque Isle ³ Roscommon ³ Saginaw Wexford	Alcona ³ Allegan Alpena ³ Antrim ³ Barry Charlevoix ³ Cheboygan ³ Crawford ³ Eaton Emmet ³ Genesee Iosco ³ Isabella Kalkaska ³ Kent Lake ⁴ Midland Missaukee ³ Montmorency ³ Newaygo ⁴ Oakland Oceana ⁴ Ogemaw ³ Oscoda ³ Otsego ³ Ottawa Presque Isle ³ Roscommon ³ Saginaw Wexford	Alcona ³ Allegan Alpena ³ Antrim ³ Barry Charlevoix ³ Cheboygan ³ Crawford ³ Eaton Emmet ³ Genesee Grosse Pointe ¹ Hillsdale Iosco ³ Isabella Kalkaska ³ Kent Lake ⁴ Midland Missaukee ³ Montmorency ³ Newaygo ⁴ Oakland Oceana ⁴ Ogemaw ³ Oscoda ³ Otsego ³ Ottawa Presque Isle ³ Roscommon ³ Saginaw Van Buren Wexford	Alcona ³ Allegan Alpena ³ Antrim ³ Arenac ³ Barry Branch Clare ³ Charlevoix ³ Cheboygan ³ Crawford ³ Eaton Emmet ³ Genesee Gladwin ³ Hillsdale Iosco ³ Isabella Kalkaska ³ Kent Lake ³ Luce ³ Mackinac ³ Midland Missaukee ³ Montmorency ³ Newaygo ³ Oakland Oceana ³ Ogemaw ³ Oscoda ³ Otsego ³ Ottawa Presque Isle ³ Roscommon ³ Saginaw Schoolcraft ³ Van Buren Wexford
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¹ Included in 3 districts of 3 counties each.

³ Included in 4 districts of 4 counties each.

⁴ Included in 1 district of 3 counties.

MINNESOTA

St. Louis	St. Louis	St. Louis	St. Louis	St. Louis
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TABLE 1.—Counties, townships, or districts in the United States in which rural sections were provided with health service under whole-time health officers each year from 1931 to 1935, as of Dec. 31—Continued

MISSISSIPPI				
1931	1932	1933	1934	1935
Adams Bolivar Clarke Coahoma Copiah Forrest Hancock Harrison Hinds Holmes Humphreys Issaquena Jackson Lamar Lauderdale Lee Leflore Lincoln Monroe Pearl River Pike Perry Pike Sharkey Sunflower Tishomingo Union Warren Washington Yazoo	Adams Bolivar Coahoma Copiah Forrest Hancock Harrison Hinds Holmes Humphreys Jackson Lamar Lauderdale Lee Leflore Lincoln Monroe Pearl River Pike Perry Sunflower Union Warren Washington Yazoo	Adams Bolivar Coahoma Forrest Hancock Harrison Hinds Holmes Humphreys Jackson Lamar Lauderdale Lee Leflore Lincoln Monroe Pearl River Pike Sharkey Sunflower Union Warren Washington Yazoo	Adams Bolivar Coahoma Copiah Forrest Hancock Harrison Hinds Holmes Humphreys Jackson Lamar Lauderdale Lee Leflore Lincoln Monroe Pearl River Pike Sharkey Sunflower Union Warren Washington Yazoo	Adams Bolivar Coahoma Copiah Forrest Hancock Harrison Hinds Holmes Humphreys Jackson Lamar Lauderdale Lee Leflore Lincoln Monroe Pearl River Pike Sharkey Sunflower Union Warren Washington Yazoo
MISSOURI				
Boone Buchanan Dunklin Greene Jackson Marion Miller New Madrid Pemiscot St. Louis Scott	Boone Buchanan Dunklin Greene Jackson Marion Miller New Madrid Pemiscot St. Louis	Buchanan Dunklin Greene Jackson Marion Miller New Madrid Pemiscot St. Louis	Buchanan Dunklin Greene Jackson Marion Miller New Madrid St. Louis	Buchanan Dunklin Greene Jackson Marion Miller
MONTANA				
Cascade Gallatin Lewis and Clark Missoula	Cascade Gallatin Lewis and Clark Missoula	Cascade Gallatin Lewis and Clark Missoula	Cascade Gallatin Lewis and Clark Missoula	Cascade Gallatin Missoula
NEW MEXICO				
Bernalillo Dona Ana Eddy Santa Fe Union Valencia	Bernalillo Dona Ana Eddy Santa Fe Union Valencia	Bernalillo Dona Ana Eddy Santa Fe Union Valencia	Bernalillo Dona Ana Eddy Santa Fe Union Valencia	Bernalillo ¹ Catron ² Chaves ³ Colfax ³ Curry ³ De Baca ³ Dona Ana ³ Eddy ³ Grant ³ Guadalupe ³ Harding ³ Hidalgo ³ Lea ³ Lincoln ³ Luna ³ McKinley ³

¹ Including 3 districts of 2 counties each.

² Including 3 districts of 3 counties each.

³ Including 4 districts of 4 counties each.

TABLE 1.—Counties, townships, or districts in the United States in which rural sections were provided with health service under whole-time health officers each year from 1931 to 1935, as of Dec. 31—Continued

NEW MEXICO—Continued

1931	1932	1933	1934	1935
				Mora ¹ Otero ² Quay ³ Rio Arriba ² Roosevelt ² Sandoval ¹ San Juan ¹ San Miguel ¹ Santa Fe ² Sierra ¹ Socorro ² Taos ¹ Torrance ² Union ² Valencia ²

¹ Including 3 districts of 2 counties each.

² Including 3 districts of 3 counties each.

³ Including 4 districts of 4 counties each.

NEW YORK

Cattaraugus Cortland Suffolk Westchester	Cattaraugus Cortland Suffolk Westchester	Cattaraugus Columbia Cortland Suffolk Westchester	Cattaraugus Columbia Cortland Suffolk Westchester	Cattaraugus Columbia Cortland Suffolk Westchester
---------------------------------------------------	---------------------------------------------------	---------------------------------------------------------------	---------------------------------------------------------------	---------------------------------------------------------------

NORTH CAROLINA

Beaufort Bladen Buncombe Cabarrus Columbus Cumberland Davidson Durham Edgecombe Forsyth Franklin Gaston Granville Guilford Halifax Johnston Lenoir Mecklenburg Moore New Hanover Northampton Pitt Randolph Richmond Robeson Rowan Rutherford Sampson Stokes Stokes ¹ Surry Vance Wake Wayne Wilkes Wilson Yadkin	Beaufort Bladen Buncombe Cabarrus Columbus Cumberland Davidson Durham Edgecombe Forsyth ¹ Franklin Gaston Granville Guilford Halifax Lenoir Mecklenburg Moore New Hanover Northampton Pitt Randolph Richmond Robeson Rowan Rutherford Sampson Stokes ¹ Surry Vance Wake Wayne Wilkes Wilson Yadkin	Beaufort Bladen Buncombe Cabarrus Columbus Cumberland Davidson Durham Edgecombe Forsyth ¹ Franklin Gaston Granville Guilford Halifax Hyde Lenoir Mecklenburg Moore Nash New Hanover Northampton Pitt Randolph Richmond Robeson Rowan Sampson Stokes ¹ Stokes ¹ Surry Vance Wake Wayne Wilkes Wilson Yadkin	Beaufort Bertie Bladen Buncombe Cabarrus Columbus Cumberland Davidson Duplin Durham Edgecombe Forsyth ¹ Franklin Gaston Granville Guilford Halifax Haywood ² Hyde Jackson ² Lenoir Mecklenburg Moore New Hanover Northampton Pitt Randolph Richmond Robeson Rowan Rutherford Sampson Stokes ¹ Surry Swain ² Vance Wake Wayne Wilkes Wilson Yadkin ¹	Avery ¹ Beaufort Bertie Brunswick Buncombe Cabarrus Caldwell Columbus Craven Cumberland Davidson Duplin Durham Edgecombe Forsyth ¹ Franklin Gaston Graham ² Granville Guilford Halifax Haywood ² Hyde Jackson ² Lenoir Macon ² Mecklenburg Moore Nash New Hanover Northampton Orange Pamlico Person Pitt Polk Randolph Richmond Robeson Rowan Rutherford
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¹ Included in 2 districts of 3 counties each.

² Included in 1 district of 5 counties.

TABLE 1.—Counties, townships, or districts in the United States in which rural sections were provided with health service under whole-time health officers each year from 1931 to 1935, as of Dec. 31—Continued

NORTH CAROLINA—Continued

1931	1932	1933	1934	1935
				Sampson Stokes ¹ Surry Swain ² Vance Wake Watauga ¹ Wayne Wilkes Wilson Yadkin ¹ Yancey ¹

¹ Included in 2 districts of 3 counties each.

² Included in 1 district of 5 counties.

OHIO

Allen Ashtabula Belmont Butler Clinton Columbiana Coshocton Crawford Cuyahoga Darke Delaware Erie Fayette Franklin Guernsey Hamilton Hancock Hocking Huron Jackson Jefferson Lorain Lucas Mahoning Marion Medina Meigs Mercer Miami Montgomery Morrow Perry Pickaway Preble Richland Ross Scioto Seneca Shelby Stark Summit Trumbull Tuscarawas Washington Wayne Wood	Allen Ashtabula Belmont Butler Clinton Columbiana Coshocton Crawford Cuyahoga Darke Delaware Erie Fayette Franklin Hamilton Hancock Hocking Huron Jackson Jefferson Lorain Lucas Mahoning Marion Medina Meigs Mercer Miami Montgomery Morrow Perry Pickaway Preble Richland Ross Scioto Seneca Shelby Stark Summit Trumbull Tuscarawas Washington Wayne Wood	Allen Belmont Butler Clinton Coshocton Crawford Cuyahoga Darke Delaware Erie Fayette Hamilton Hancock Hocking Huron Jefferson Lorain Lucas Mahoning Marion Medina Meigs Mercer Miami Montgomery Perry Pickaway Preble Richland Ross Scioto Seneca Shelby Stark Summit Trumbull Tuscarawas Washington Wayne Wood	Allen Athens Butler Clinton Crawford Cuyahoga Darke Delaware Erie Fayette Guernsey Hamilton Hancock Hocking Huron Jefferson Lorain Lucas Madison Mahoning Marion Medina Meigs Mercer Miami Montgomery Perry Pickaway Preble Richland Ross Seneca Shelby Stark Summit Trumbull Tuscarawas Washington Wayne Wood	Athens Butler Clinton Crawford Cuyahoga Darke Delaware Erie Fayette Guernsey Hamilton Hancock Hocking Huron Jefferson Lorain Lucas Madison Mahoning Marion Medina Meigs Mercer Miami Montgomery Perry Pickaway Preble Richland Ross Seneca Shelby Stark Summit Trumbull Tuscarawas Washington Wayne Wood Wyandot
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OKLAHOMA

Carter Le Flore McCurtain Muskogee Okmulgee Ottawa Pittsburg Pottawatomie Seminole			Le Flore	Le Flore Seminole
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TABLE 1.—Counties, townships, or districts in the United States in which rural sections were provided with health service under whole-time health officers each year from 1931 to 1935, as of Dec. 31—Continued

OREGON

1931	1932	1933	1934	1935
Clackamas Coos Douglas Jackson Klamath Lane Marion Multnomah	Clackamas Coos Douglas Jackson Klamath Lane Marion	Clackamas Jackson Klamath Lane Marion Multnomah	Clackamas Douglas Jackson Klamath Lane Marion Multnomah	Clackamas Douglas Jackson Klamath Lane Marion

PENNSYLVANIA

Allegheny Bucks Luzerne	Allegheny Bucks Luzerne	Allegheny Bucks Luzerne		
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SOUTH CAROLINA

Aiken Anderson Beaufort Berkeley Charleston Cherokee Darlington Dillon Dorchester Fairfield Florence Georgetown Greenville Greenwood Horry Kershaw Lexington Marion Newberry Oconee Orangeburg Pickens Richland Spartanburg	Aiken Anderson Beaufort Berkeley Charleston Cherokee Darlington Dillon Dorchester Fairfield Florence Georgetown Greenville Greenwood Horry Kershaw Lexington Marion Newberry Oconee Orangeburg Pickens Richland Spartanburg	Aiken Anderson Beaufort Berkeley Charleston Cherokee Darlington Dillon ¹ Dorchester Fairfield Florence Georgetown Greenville Greenwood Horry Kershaw Marion ¹ Newberry Oconee Orangeburg Pickens Richland Spartanburg	Aiken Anderson Beaufort Berkeley Charleston Cherokee Darlington Dillon ¹ Dorchester Fairfield Florence Georgetown Greenville Greenwood Horry Kershaw Marion ¹ Newberry Oconee Orangeburg Pickens Richland Spartanburg	Aiken Anderson Beaufort Berkeley Charleston Cherokee Darlington Dillon ¹ Dorchester Fairfield Florence Georgetown Greenville Greenwood Horry Kershaw Marion ¹ Newberry Oconee Orangeburg Pickens Richland Spartanburg
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¹ Included in 1 district of 2 counties.

SOUTH DAKOTA

Pennington	Pennington	Pennington		
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TENNESSEE

Bledsoe ¹ Blount Bradley Carter Clay ¹ Cumberland Davidson ¹ Dyer Fentress ¹ Gibson Giles Greene Grundy ¹ Hamilton Hardeman Humphreys Jackson ¹	Bledsoe ¹ Bradley Carter Clay ¹ Davidson ¹ Dyer Fentress ¹ Gibson Giles Greene Grundy ¹ Hamilton Hardeman Humphreys Jackson ¹ Knox Lake	Bledsoe Bradley Davidson Dyer Fentress ¹ Gibson Giles Greene Grundy ¹ Hamilton Humphreys Jackson ¹ Knox Lake Lauderdale Lincoln	Anderson ¹ Bledsoe ¹ Blount Bradley Campbell ¹ Carter ¹ Davidson Dyer Fentress ¹ Gibson Giles Greene Grundy Hamilton Hardeman Humphreys Jackson ¹	Bledsoe ¹ Blount Bradley Carter ¹ Davidson Fentress ¹ Gibson Giles Greene Grundy Hamilton Hardeman Humphreys Jackson ¹ Knox Lake Lauderdale
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¹ Included in 1 district of 3 counties.

² Included in 4 districts of 2 counties each.

³ Included in 3 districts of 2 counties each.

⁴ Included in 5 districts of 2 counties each.

TABLE 1.—Counties, townships, or districts in the United States in which rural sections were provided with health service under whole-time health officers each year from 1931 to 1935, as of Dec. 31—Continued

TENNESSEE—Continued

1931	1932	1933	1934	1935
Knox Lake Lauderdale Lewis Lincoln Maury Meigs ¹ Monroe Montgomery Obion Overton ² Pickett ³ Rhea ⁴ Roane Rutherford Sequatchie ⁵ Sevier Shelby Sullivan Sumner Tipton Unicoi Washington Weakley Williamson Wilson	Lauderdale Lewis Lincoln Maury Meigs ¹ Monroe Montgomery Obion Overton ² Pickett ³ Rhea ⁴ Roane Rutherford Sequatchie ⁵ Sevier Shelby Sullivan Sumner Tipton Unicoi Washington Weakley Williamson Wilson	Maury Meigs ⁴ Montgomery Obion Rhea ⁴ Roane Rutherford Sequatchie ⁴ Sevier Shelby Sullivan Sumner Tipton Washington Weakley Williamson Wilson	Knox Lake Lauderdale Lincoln Maury Meigs ⁵ Montgomery Obion Rhea ⁵ Roane Rutherford Sequatchie ⁵ Sevier Shelby Sullivan Sumner Tipton Unicoi ⁴ Washington Weakley Williamson Wilson	Lincoln Maury Meigs Montgomery Obion Rhea Roane Rutherford Sequatchie ⁴ Sevier Shelby Sullivan Sumner Tipton Unicoi Washington Weakley Williamson Wilson

¹ Included in 1 district of 3 counties.² Included in 4 districts of 2 counties each.⁴ Included in 3 districts of 2 counties each.⁵ Included in 5 districts of 2 counties each.

TEXAS

Cameron ¹ Cass Hidalgo ⁶ Jefferson McLennan Nolan Potter Starr ¹ Willacy ⁶	Cameron Gregg Hidalgo McLennan Nolan Potter Starr Tarrant	Dallas El Paso Gregg Hidalgo McLennan Nolan Potter Tarrant	Dallas El Paso Gregg Hidalgo Nolan Potter Tarrant	Cameron Culberson ¹ Dallas El Paso ¹ Hidalgo Hudspeth ¹ Nolan Potter Tarrant
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¹ 1 district of 3 counties.⁶ Included in 1 district of 4 counties.

UTAH

Davis Utah	Davis Utah	Davis Utah	Davis Utah	Davis
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VIRGINIA

Accomac ¹ Albemarle Amelia ¹ Appomattox ¹ Arlington Augusta Brunswick ¹ Buckingham ¹ Charlotte ¹ Cumberland ¹ Fairfax	Accomac ¹ Albemarle Amelia ¹ Appomattox ¹ Arlington Augusta Brunswick ¹ Buckingham ¹ Charlotte ¹ Cumberland ¹ Fairfax	Albemarle Arlington Augusta Brunswick ¹ Fairfax Greensville ¹ Halifax Henrico Isle of Wight ¹ Nansemond ¹ Norfolk ¹	Albemarle Arlington Augusta Brunswick ¹ Fairfax Greensville ¹ Halifax Henrico Isle of Wight ¹ Nansemond ¹ Norfolk ¹	Albemarle Alleghany ¹ Arlington Augusta Bath ¹ Brunswick ¹ Buckingham ¹ Dickinson ¹ Elizabeth City ¹ Fairfax Greene ¹
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¹ Included in 3 districts of 3 counties each.² Included in 2 districts of 4 counties each.³ Included in 1 district of 7 counties.

TABLE 1.—Counties, townships, or districts in the United States in which rural sections were provided with health service under whole-time health officers each year from 1931 to 1935, as of Dec. 31—Continued

VIRGINIA—Continued

1931	1932	1933	1934	1935
Greensville ¹ Halifax Henrico Isle of Wight ² Lunenburg ¹ Nansemond ² Norfolk ³ Northampton ¹ Nottoway ¹ Pittsylvania Powhatan ¹ Prince Edward ¹ Princess Anne ² Rockbridge Southampton Wise	Greensville ¹ Halifax Henrico Isle of Wight ² Lunenburg ¹ Nansemond ² Norfolk ³ Nottoway ¹ Pittsylvania Powhatan ¹ Prince Edward ¹ Princess Anne ² Rockbridge Southampton	Pittsylvania Prince Edward Princess Anne ² Rockbridge Southampton	Nottoway ¹ Pittsylvania Prince Edward ² Princess Anne ² Rockbridge Southampton	Greensville ¹ Halifax ⁴ Hanover Henrico Isle of Wight ² James City ² Lee ² Madison ² Mecklenburg ¹ Montgomery Nansemond ⁴ Norfolk ⁴ Northampton Nottoway ¹ Page ² Pittsylvania ⁴ Prince Edward ¹ Princess Anne ⁴ Rappahannock ² Rockbridge ¹ Rockingham ² Scott ² Shenandoah ² Southampton Warren ¹ Warwick ² Wise ² Wythe York ²

¹ Included in 3 districts of 3 counties each.

² Included in 2 districts of 4 counties each.

³ Included in 1 district of 7 counties each.

⁴ Included in 3 districts of 2 counties each.

WASHINGTON

Chelan Clark King Snohomish Spokane Walla Walla Whitman Yakima	Chelan Clark King Snohomish Spokane Walla Walla Whitman Yakima	Chelan Clark King Snohomish Spokane Walla Walla Whitman Yakima	Chelan Clark King Snohomish Spokane Walla Walla Whitman Yakima	Chelan Clallam Clark King Snohomish Spokane Walla Walla Yakima
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WEST VIRGINIA

Berkeley Boone Brooke Doddridge ¹ Fayette Hancock Harrison Kanawha Logan Marion Marshall Monongalia Ohio Pleasants ¹ Preston Raleigh Ritchie ¹ Tyler ¹ Wetzel ¹ Wood	Berkeley Boone Brooke Fayette Hancock Harrison Kanawha Logan Marion Marshall Monongalia Ohio Preston Raleigh Wood	Berkeley Boone Fayette Hancock Harrison Kanawha Logan Marshall Monongalia Ohio Preston Raleigh Wood	Berkeley Boone Fayette Hancock Harrison Kanawha Logan Marshall Monongalia Ohio Preston Raleigh Wood	Berkeley Boone Brooke Fayette Hancock Harrison Kanawha Logan Marshall Monongalia Ohio Preston Raleigh Wood
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¹ Included in 1 district of 5 counties.

Table 2, a résumé of table 1, indicates the number of whole-time county, township, or district health units in each of 38 States during the years 1931 to 1935, inclusive. There is also shown the increase

or decrease from year to year of whole-time units in each of these States. It will be noted that there was a gain of 71 whole-time units in 1935 over 1934.

TABLE 2.—Résumé of table 1

	Number of counties					Increase or decrease in—			
	Jan. 1, 1932	Dec. 31, 1932	Dec. 31, 1933	Dec. 31, 1934	Dec. 31, 1935	1932	1933	1934	1935
Alabama.....	54	54	46	50	56	—	—8	+4	+6
Arizona.....	5	4	4	4	4	—1	—	—	—
Arkansas.....	30	27	21	19	19	—3	—6	—2	—
California.....	14	14	13	15	16	—	—1	+2	+1
Colorado.....	1	—	—	—	—	—1	—	—	—
Connecticut.....	1	2	2	2	—	+1	—	—	—2
Delaware.....	3	3	3	3	3	—	—	—	—
Florida.....	2	3	2	2	3	+1	—1	—	+1
Georgia.....	35	31	30	30	31	—4	—1	—	+1
Idaho.....	1	1	—	—	—	—	—1	—	—
Illinois.....	1	1	1	1	—	—	—	—	—1
Iowa.....	3	3	1	1	1	—	—2	—	—
Kansas.....	10	6	4	3	3	—4	—2	—1	—
Kentucky.....	81	79	73	70	76	—2	—6	—3	+6
Louisiana.....	32	31	31	32	34	—1	—	+1	+2
Maine.....	6	5	5	5	2	—1	—	—	—3
Maryland.....	18	21	22	23	23	+3	+1	+1	—
Massachusetts.....	3	3	3	3	3	—	—	—	—
Michigan.....	25	29	30	32	38	+4	+1	+2	+6
Minnesota.....	1	1	1	1	1	—	—	—	—
Mississippi.....	29	25	24	25	25	—4	—1	+1	—
Missouri.....	11	10	9	8	5	—1	—1	—1	—3
Montana.....	4	4	4	4	3	—	—	—	—1
New Mexico.....	6	6	6	6	31	—	—	—	+25
New York.....	4	4	5	5	5	—	+1	—	—
North Carolina.....	36	35	36	41	53	—1	+1	+5	+12
Ohio.....	46	45	40	39	40	—1	—5	—1	+1
Oklahoma.....	9	—	—	1	2	—9	—	+1	+1
Oregon.....	8	7	6	7	6	—1	—1	+1	—1
Pennsylvania.....	3	3	3	—	—	—	—	—3	—
South Carolina.....	24	24	23	23	23	—	—1	—	—
South Dakota.....	1	1	1	—	—	—	—	—	—
Tennessee.....	43	41	34	39	34	—2	—7	+5	—5
Texas.....	9	8	8	7	9	—1	—	—1	+2
Utah.....	2	2	2	2	1	—	—	—	—1
Virginia.....	27	25	16	17	40	—2	—9	+1	+23
Washington.....	8	8	8	8	8	—	—	—	—
West Virginia.....	20	15	13	13	14	—5	—2	—	+1
Total.....	616	581	533	541	612	—35	—51	+10	+71

The accompanying map shows the location of the counties, townships, or districts in the United States with health service for rural areas, under the direction of whole-time local health officers, on December 31, 1935.

From January 1, 1935, to December 31, 1935, whole-time health service was established in 88 units and was discontinued in 17—a net gain of 71. The greatest gains were in the State of New Mexico, in which whole-time health service was established in 25 counties, and in the State of Virginia, in which whole-time health service was established in 23 counties.

Delaware, Maryland, and New Mexico lead in the percentage of rural population under whole-time health service, all of their counties having been provided with whole-time local health organizations. The health units in Delaware have been provided by the State, whereas those in Maryland and New Mexico are maintained by the

local governments, with or without assistance from the State health departments or other sources.

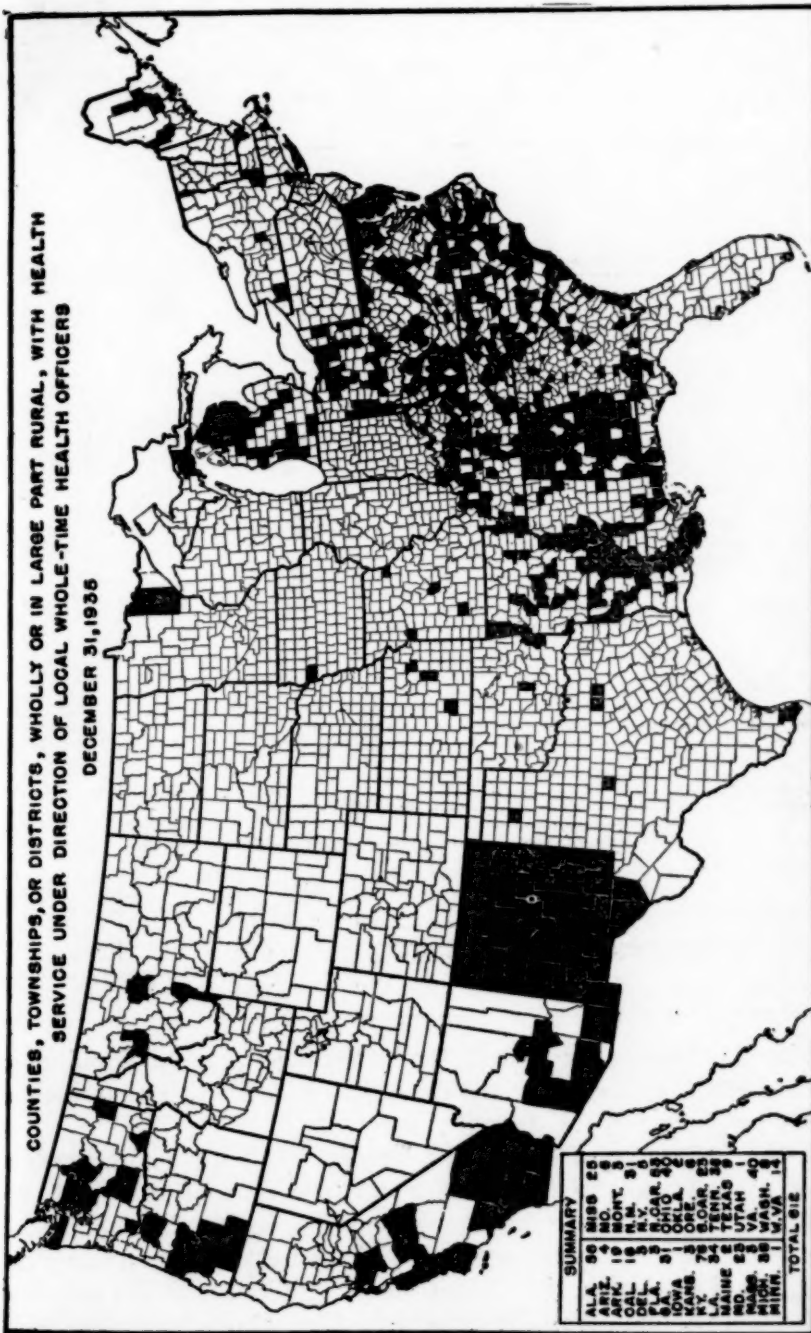


FIGURE 1.—Rural areas (in black) having whole-time health officers, December 31, 1935.

TABLE 3.—Percentage of rural population having on Dec. 31, 1935, health service under local whole-time health officers

State	Rural population as of Dec. 31, 1935 (estimate from 1939 census)	Rural population with local health service under direction of whole-time health officers	Percentages of rural population with local health service under direction of whole-time health officers
Alabama.....	1,937,382	1,684,695	87.0
Arizona.....	324,469	185,743	57.2
Arkansas.....	1,477,155	519,447	35.2
California.....	1,753,113	998,848	57.0
Colorado.....	532,479	0	0.0
Connecticut.....	492,433	0	0.0
Delaware.....	122,525	122,525	100.0
Florida.....	762,167	64,168	8.4
Georgia.....	2,013,016	571,243	28.4
Idaho.....	317,037	0	0.0
Illinois.....	1,994,927	0	0.0
Indiana.....	1,442,611	0	0.0
Iowa.....	1,491,647	23,350	1.6
Kansas.....	1,151,165	65,644	5.7
Kentucky.....	1,833,781	1,232,576	67.2
Louisiana.....	1,322,876	796,472	60.2
Maine.....	480,109	26,410	5.5
Maryland.....	699,524	699,524	100.0
Massachusetts.....	539,399	57,726	10.7
Michigan.....	1,603,862	636,332	40.0
Minnesota.....	1,306,337	48,313	3.7
Mississippi.....	1,738,551	696,596	40.1
Missouri.....	1,770,248	168,444	9.5
Montana.....	356,570	28,718	8.1
Nebraska.....	892,300	0	0.0
Nevada.....	56,594	0	0.0
New Hampshire.....	208,421	0	0.0
New Jersey.....	713,942	0	0.0
New Mexico.....	328,344	328,344	100.0
New York.....	2,217,983	330,304	14.9
North Carolina.....	2,524,047	1,593,201	63.1
North Dakota.....	572,535	0	0.0
Ohio.....	2,171,340	1,143,265	52.7
Oklahoma.....	1,622,351	114,028	7.0
Oregon.....	504,244	184,355	36.6
Pennsylvania.....	3,097,139	0	0.0
Rhode Island.....	72,740	0	0.0
South Carolina.....	1,367,685	834,611	61.0
South Dakota.....	577,238	0	0.0
Tennessee.....	1,720,018	825,242	48.0
Texas.....	3,595,144	219,271	6.1
Utah.....	245,942	11,450	4.7
Vermont.....	240,845	0	0.0
Virginia.....	1,636,937	815,345	49.8
Washington.....	718,668	318,265	44.3
West Virginia.....	1,257,923	555,081	44.1
Wisconsin.....	1,385,163	0	0.0
Wyoming.....	165,798	0	0.0
Total.....	55,356,725	15,899,507	28.7

Table 3 presents, by States, the percentage of rural population having health service under the direction of local whole-time health officers at the end of the calendar year 1935.

Of the 612 counties, townships, or districts with health service under whole-time local health officers at the close of 1935, 587, or 95.3 percent, were receiving financial assistance for the support of their health service from one or more of the following agencies: The State Board of Health, the United States Public Health Service, the Rockefeller Foundation, the American Red Cross, the American Women's Hospital Fund, the Rosenwald Fund, the Commonwealth Fund, and the Milbank Memorial Fund.

The accompanying chart shows, by States, the number of counties, townships, or districts with health service under the direction of whole-time local health officers from 1931-35, and the percentage of the rural population of each State receiving such service at the close of the calendar year 1935. There also is shown the total number of counties, townships, or districts in the United States having whole-

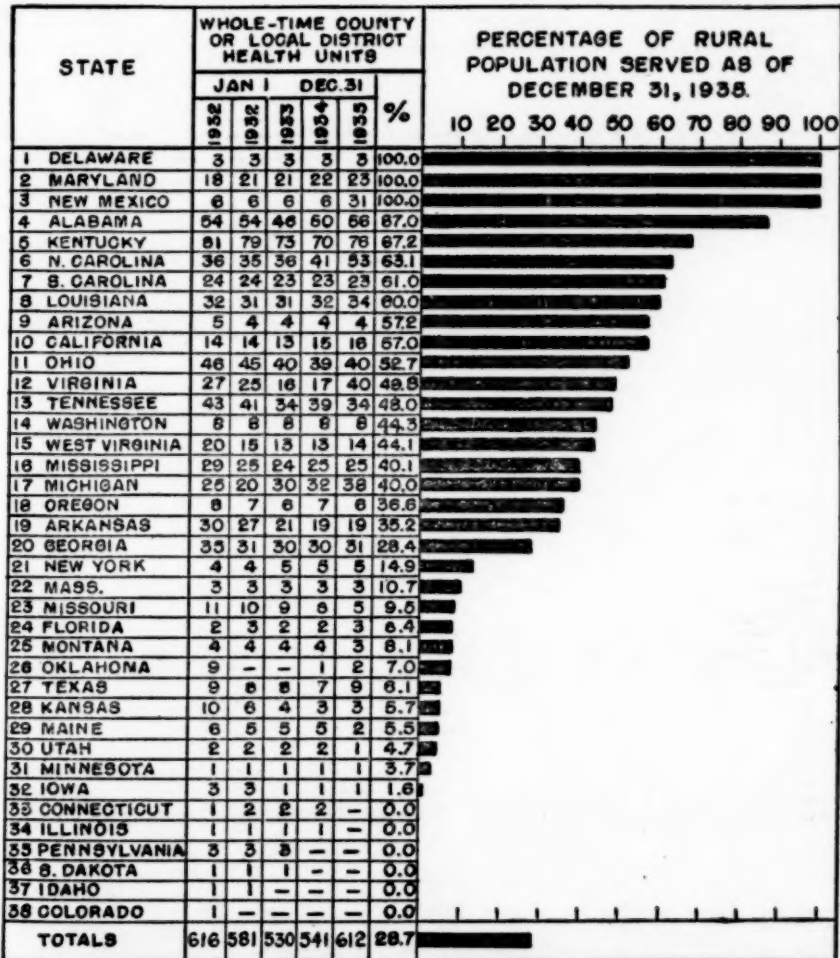


FIGURE 2.—Number of whole-time county or local district health units, by States, 1932-35, and percentage of rural population served on December 31, 1935.

time local health service, together with the percentage of the rural population of the entire United States served by whole-time local health organizations.

It will be noted that 71.3 percent of our rural population is as yet not provided with the form of health organization which is believed to be adapted to rural areas.

DEATHS DURING WEEK ENDED JULY 25, 1936

[From the Weekly Health Index, issued by the Bureau of the Census, Department of Commerce]

	Week ended July 25, 1936	Correspond- ing week, 1935
Data from 86 large cities of the United States:		
Total deaths.....	7,841	7,201
Deaths per 1,000 population, annual basis.....	11.0	10.2
Deaths under 1 year of age.....	557	480
Deaths under 1 year of age per 1,000 estimated live births.....	50	44
Deaths per 1,000 population, annual basis, first 30 weeks of year.....	12.9	11.9
Data from industrial insurance companies:		
Policies in force.....	68,651,544	67,942,296
Number of death claims.....	13,710	12,671
Death claims per 1,000 policies in force, annual rate.....	10.4	9.7
Death claims per 1,000 policies, first 30 weeks of year, annual rate.....	10.4	10.2

PREVALENCE OF DISEASE

No health department, State or local, can effectively prevent or control disease without knowledge of when, where, and under what conditions cases are occurring

UNITED STATES

CURRENT WEEKLY STATE REPORTS

These reports are preliminary, and the figures are subject to change when later returns are received by the State health officers

Reports for Weeks Ended Aug. 1, 1936, and Aug. 3, 1935

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended Aug. 1, 1936, and Aug. 3, 1935

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Aug. 1, 1936	Week ended Aug. 3, 1935	Week ended Aug. 1, 1936	Week ended Aug. 3, 1935	Week ended Aug. 1, 1936	Week ended Aug. 3, 1935	Week ended Aug. 1, 1936	Week ended Aug. 3, 1935
New England States:								
Maine.....	1	1			40	51	0	0
New Hampshire.....					12	1	0	0
Vermont.....					7	20	0	0
Massachusetts.....	9	10			118	65	3	3
Rhode Island.....		2			7	22	0	1
Connecticut.....	1	2		1	14	35	0	1
Middle Atlantic States:								
New York.....	29	22	11	11	261	395	10	12
New Jersey.....	3	12	2	1	74	102	3	4
Pennsylvania ²	10	18			89	132	3	4
East North Central States:								
Ohio.....	25	16	11	3	121	79	9	4
Indiana.....	11	14	5	17	2	10	1	3
Illinois.....	22	31	7	5	12	89	5	10
Michigan.....	12	6		2	22	199	1	1
Wisconsin.....	1	2	1	23	32	440	0	1
West North Central States:								
Minnesota.....	3	1	2	2	20	18	2	2
Iowa.....		2		2	4	8	1	1
Missouri.....	6	11	18	27	5	30	1	4
North Dakota.....	4	3	2		3	2	0	0
South Dakota.....	1	1				5	0	0
Nebraska.....	5	1			2	21	1	0
Kansas.....	4	5		2	3	16	0	3
South Atlantic States:								
Delaware.....		1				8	0	0
Maryland ²	4	1		1	33	16	1	3
District of Columbia.....	5	8			20	3	1	5
Virginia ²		12			16	21	6	2
West Virginia.....	3	8	4	42	4	11	0	2
North Carolina ²	9	15			2	4	2	3
South Carolina.....	3	3	29	45	6	3	1	1
Georgia ⁴	11	6					3	0
Florida ⁴	7	4	1		2		1	0

See footnotes at end of table.

*Cases of certain communicable diseases reported by telegraph by State health officers
for weeks ended Aug. 1, 1936, and Aug. 3, 1935—Continued*

Division and State	Diphtheria		Influenza		Measles		Meningococcus meningitis	
	Week ended Aug. 1, 1936	Week ended Aug. 3, 1935	Week ended Aug. 1, 1936	Week ended Aug. 3, 1935	Week ended Aug. 1, 1936	Week ended Aug. 3, 1935	Week ended Aug. 1, 1936	Week ended Aug. 3, 1935
East South Central States:								
Kentucky ¹	3	3	1	—	2	23	1	1
Tennessee.....	6	10	2	4	10	13	2	1
Alabama ⁴	9	13	1	2	3	1	1	0
Mississippi ³	5	10	—	—	—	—	0	1
West South Central States:								
Arkansas.....	1	7	4	5	—	9	0	2
Louisiana ⁴	11	17	13	18	4	4	0	1
Oklahoma ⁴	6	8	5	10	3	—	0	1
Texas ⁴	16	31	24	14	18	19	1	0
Mountain States:								
Montana.....	1	4	—	—	1	17	0	0
Idaho.....	—	—	1	—	7	—	0	0
Wyoming ²	—	—	—	—	3	7	0	0
Colorado.....	4	9	—	—	5	104	1	0
New Mexico.....	3	1	1	—	6	—	0	0
Arizona.....	2	1	5	1	21	1	0	0
Utah ²	—	—	—	—	12	—	0	0
Pacific States:								
Washington.....	1	—	—	—	22	27	0	1
Oregon.....	—	2	2	11	5	47	0	2
California.....	12	14	11	9	91	148	5	1
Total.....	269	348	153	248	1,144	2,226	66	81
First 31 weeks of year.....	14,542	17,317	141,313	103,499	258,586	693,097	5,832	4,027

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Aug. 1, 1936	Week ended Aug. 3, 1935	Week ended Aug. 1, 1936	Week ended Aug. 3, 1935	Week ended Aug. 1, 1936	Week ended Aug. 3, 1935	Week ended Aug. 1, 1936	Week ended Aug. 3, 1935
New England States:								
Maine.....	2	2	17	3	0	0	3	4
New Hampshire.....	1	0	—	2	0	0	0	0
Vermont.....	1	0	2	5	0	0	1	0
Massachusetts.....	1	47	55	35	0	0	4	5
Rhode Island.....	0	7	2	3	0	0	0	0
Connecticut.....	0	10	9	8	0	0	0	0
Middle Atlantic States:								
New York.....	6	104	101	78	0	0	19	11
New Jersey.....	0	7	26	14	0	0	9	2
Pennsylvania ²	1	2	72	75	0	0	25	13
East North Central States:								
Ohio.....	1	1	75	54	1	0	13	31
Indiana.....	0	0	19	14	0	0	6	25
Illinois.....	12	10	117	95	12	0	19	52
Michigan.....	3	10	79	56	0	0	11	19
Wisconsin.....	0	0	78	87	11	6	3	0
West North Central States:								
Minnesota.....	4	1	28	34	2	1	0	27
Iowa.....	0	0	29	14	0	3	1	2
Missouri.....	2	2	23	16	1	0	20	34
North Dakota.....	3	0	2	4	9	0	0	2
South Dakota.....	1	0	4	5	4	6	1	0
Nebraska.....	3	0	16	4	2	3	0	1
Kansas.....	0	0	36	23	0	0	8	20
South Atlantic States:								
Delaware.....	0	0	—	1	0	0	0	2
Maryland ^{2,3}	0	10	15	13	0	0	11	14
District of Columbia.....	0	7	1	4	0	0	1	3
Virginia ³	3	100	4	14	0	0	10	38
West Virginia.....	0	0	12	18	1	0	10	31
North Carolina ^{2,4}	2	40	7	20	0	0	23	40
South Carolina.....	0	1	2	1	0	0	13	31
Georgia ⁴	6	1	8	4	0	0	46	36
Florida ⁴	0	0	3	—	0	0	2	21

See footnotes at end of table.

Cases of certain communicable diseases reported by telegraph by State health officers for weeks ended Aug. 1, 1936, and Aug. 3, 1935—Continued

Division and State	Poliomyelitis		Scarlet fever		Smallpox		Typhoid fever	
	Week ended Aug. 1, 1936	Week ended Aug. 3, 1935	Week ended Aug. 1, 1936	Week ended Aug. 3, 1935	Week ended Aug. 1, 1936	Week ended Aug. 3, 1935	Week ended Aug. 1, 1936	Week ended Aug. 3, 1935
East South Central States:								
Kentucky ¹	3	18	5	16	0	0	32	55
Tennessee	26	10	13	16	0	0	32	55
Alabama ⁴	29	1	4	9	0	0	15	12
Mississippi ¹	5	1	2	5	0	0	19	18
West South Central States:								
Arkansas	0	1	4	8	0	0	18	42
Louisiana ⁴	0	2	2	7	0	0	27	24
Oklahoma ⁴	0	0	5	8	0	0	14	44
Texas ⁴	1	3	21	17	0	0	34	70
Mountain States:								
Montana	1	0	4	2	20	2	3	2
Idaho	1	0	1	2	1	3	1	0
Wyoming ¹	0	0	9	5	2	2	1	1
Colorado	6	1	7	22	1	0	4	4
New Mexico	0	0	8	3	0	0	7	14
Arizona	0	0	5	2	0	0	5	4
Utah ¹	0	0	8	9	0	0	2	0
Pacific States:								
Washington	1	0	8	10	0	6	1	2
Oregon	1	0	6	10	1	2	4	1
California	16	19	84	50	3	2	16	10
Total	142	418	1,038	905	71	36	494	822
First 31 weeks of year	1,082	2,315	181,957	178,553	6,178	5,257	5,690	7,786

¹ New York City only.

² Rocky Mountain spotted fever, week ended Aug. 1, 1936, 20 cases, as follows: Pennsylvania, 1; Maryland, 4; Virginia, 7; North Carolina, 5; Kentucky, 1; Wyoming, 2.

³ Week ended earlier than Saturday.

⁴ Typhus fever, week ended Aug. 1, 1933, 76 cases, as follows: North Carolina, 1; Georgia, 38; Florida, 6; Alabama, 13; Louisiana, 1; Texas, 17.

⁵ Exclusive of Oklahoma City and Tulsa.

SUMMARY OF MONTHLY REPORTS FROM STATES

The following summary of cases reported monthly by States is published weekly and covers only those States from which reports are received during the current week:

State	Menin- gococ- cus menin- gitis	Diph- theria	Influ- enza	Mala- ria	Mea- sles	Pel- lagra	Poli- mye- litis	Scarlet fever	Small- pox	Ty- phoid fever
May 1936										
Puerto Rico		50	3,160	584	173	1	0		0	51
June 1936										
Hawaii Territory	2	6	151		5		4	1	0	4
Montana	3	3	40		25		0	139	101	6
Tennessee	11	21	63	221	50	52	0	47	2	51
West Virginia	16	19	43		162		2	61	1	16
Wisconsin	3	5	41	1	609		0	1,012	24	9

Summary of monthly reports from States—Continued

May 1936		June 1936—Continued		June 1936—Continued	
Puerto Rico:	Cases	German measles:	Cases	Tetanus:	Cases
Chickenpox.....	13	Tennessee.....	32	Montana.....	1
Dysentery.....	45	Wisconsin.....	61	Tennessee.....	5
Filariasis.....	2	Hookworm disease:		Trachoma:	
Mumps.....	21	Tennessee.....	2	Tennessee.....	61
Ophthalmia neonatorum.....	6	Impetigo contagiosa:		Wisconsin.....	1
Puerperal fever.....	6	Tennessee.....	2	Tularaemia:	
Tetanus.....	12	Leprosy:		Tennessee.....	1
Tetanus, infantile.....	5	Hawaii Territory.....	5	Wisconsin.....	3
Trachoma.....	3	Mumps:		Typhus fever:	
Whooping cough.....	45	Hawaii Territory.....	36	Hawaii Territory.....	1
		Montana.....	137	Tennessee.....	2
		Tennessee.....	72	Undulant fever:	
		West Virginia.....	37	Montana.....	1
		Wisconsin.....	996	Tennessee.....	2
Chickenpox:		Ophthalmia neonatorum:		Wisconsin.....	6
Hawaii Territory.....	55	Tennessee.....	4	Vincent's infection:	
Montana.....	98	Wisconsin.....	1	Montana.....	1
Tennessee.....	32	Puerperal septicemia:		Tennessee.....	4
West Virginia.....	74	Tennessee.....	1	Whooping cough:	
Wisconsin.....	1,207	Rocky Mountain spotted fever:		Hawaii Territory.....	34
Dysentery:		Montana.....	10	Montana.....	89
Hawaii Territory (amoebic).....	4	Scabies:		Tennessee.....	94
Montana (amoebic).....	1	Tennessee.....	2	West Virginia.....	88
Tennessee.....	49	Septic sore throat:		Wisconsin.....	561
Epidemic encephalitis:		Hawaii Territory.....	2		
Tennessee.....	1	Montana.....	8		
Wisconsin.....	1	Tennessee.....	5		

RODENT PLAGUE IN CALIFORNIA AND UTAH

One ground squirrel found dead July 16, 1936, in Beaver Canyon, 5 miles east of Beaver, Utah, has been proved positive for plague by animal inoculation and cultural reactions.

The Director of Public Health of California has reported plague infection in five squirrels received at the laboratory on July 28, 1936, from a ranch 33 miles north and 13 miles west of Alturas, Modoc County; also in four squirrels received at the laboratory on July 21, 1936, from 6 miles east of Watsonville, and in two squirrels received at the laboratory on July 22, 1936, from a ranch 6 miles east of Watsonville, Santa Cruz County, Calif.

City reports for week ended July 25, 1936

This table summarizes the reports received weekly from a selected list of 140 cities for the purpose of showing a cross section of the current urban incidence of the communicable diseases listed in the table. Weekly reports are received from about 700 cities, from which the data are tabulated and filed for reference.

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Small-pox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Maine:											
Portland	0		0	5	1	0	0	0	0	0	19
New Hampshire:											
Concord	0		0	0	1	0	0	0	0	0	8
Manchester	0		1	0	1	0	0	0	0	0	10
Nashua	0			0		0	0		0	0	
Vermont:											
Barre	0		0	0	0	0	0	0	0	0	0
Burlington	0		0	1	0	0	0	0	0	0	8
Rutland	0		0	0	0	1	0	0	0	0	4
Massachusetts:											
Boston	4		1	37	17	9	0	9	0	60	195
Fall River	2		0	2	0	1	0	1	0	1	33
Springfield	0		0	1	0	1	0	0	0	4	29
Worcester	0		0	16	4	2	0	3	0	5	40
Rhode Island:											
Pawtucket	0		0	0	0	0	0	0	0	0	16
Providence	1	1	0	3	0	3	0	3	2	6	41
Connecticut:											
Bridgeport	1		0	3	0	1	0	0	0	9	26
Hartford	0		0	0	1	0	0	1	1	1	28
New Haven	0		0	0	0	1	0	0	0	8	34
New York:											
Buffalo	0		0	18	0	13	0	3	2	0	117
New York	22	2	1	133	50	29	0	80	9	119	1,182
Rochester	0		0	2	2	0	0	0	0	7	54
Syracuse	0		0	14	1	4	0	1	0	22	48
New Jersey:											
Camden	0		0	4	2	1	0	2	0	0	42
Newark	0		0	17	1	3	0	4	1	27	74
Trenton	0		0	2	1	0	0	4	0	8	49
Pennsylvania:											
Philadelphia	3	1	0	38	16	11	0	18	2	65	424
Pittsburgh	2	1	1	2	25	22	0	3	1	42	154
Reading	0		0	3	0	0	0	2	1	5	24
Scranton	1	0		0		1	0		0	0	
Ohio:											
Cincinnati	4		0	10	6	7	0	10	1	5	156
Cleveland	6	3	1	19	7	12	1	13	1	110	159
Columbus	0		0	2	1	1	0	3	0	24	88
Toledo	0		0	4	6	0	0	3	0	40	68
Indiana:											
Anderson	0		0	0	0	3	0	1	0	5	7
Fort Wayne	0		0	0	1	2	0	0	0	0	24
Indianapolis	1		1	0	8	4	0	6	1	7	103
Muncie	0		0	0	0	1	0	2	0	0	10
South Bend	0		0	0	0	0	0	1	0	2	17
Terre Haute	0		0	0	0	0	0	0	0	0	23
Illinois:											
Alton	0		0	0	0	1	0	0	3	3	9
Chicago	5		0	6	34	39	2	30	1	113	634
Elgin	0		0	0	1	0	0	1	0	2	6
Moline	0		0	0	1	0	0	0	0	0	8
Springfield	0		0	0	1	1	0	0	0	14	18
Michigan:											
Detroit	5		0	5	7	34	0	20	5	176	220
Flint	0		0	1	1	4	0	2	0	2	22
Grand Rapids	0		0	2	1	3	0	0	2	14	3
Wisconsin:											
Kenosha	0		0	0	0	1	8	0	0	3	7
Madison	0		0	3	0	2	0	0	1	29	14
Milwaukee	0		0	6	7	22	1	7	0	45	110
Racine	0		0	0	2	3	0	1	0	0	12
Superior	0		0	0	0	2	0	0	0	0	8
Minnesota:											
Duluth	0		0	0	1	7	0	2	0	12	21
Minneapolis	0		0	2	3	3	0	2	0	4	130
St. Paul											

City reports for week ended July 25, 1936—Continued

State and city	Diph- theria cases	Influenza		Meas- les cases	Pneu- monia deaths	Scar- let fever cases	Small- pox cases	Tuber- culosis deaths	Ty- phoid fever cases	Whoop- ing cough cases	Deaths, all causes
		Cases	Deaths								
Iowa:											
Cedar Rapids	0			0		0	0		0	1	
Des Moines	1			0		0	0		0	0	34
Sioux City											
Waterloo											
Missouri:											
Kansas City	1		0	2	2	6	0	3	0	1	106
St. Joseph											
St. Louis	0		0	4	8	0	0	7	2	17	402
North Dakota:											
Fargo	0		0	0	0	1	0	0	0	3	13
Grand Forks	0			1		0	0		0	0	
Minot	0			1		1	0		0	0	4
South Dakota:											
Aberdeen	0			0		0	0		0	0	
Nebraska:											
Omaha	3		0	1	4	1	0	9	0	0	110
Kansas:											
Lawrence	0			0		0	0		0	0	9
Topeka											
Wichita	0		0	0	3	0	0	0	0	1	62
Delaware:											
Wilmington	0		0	1	3	0	0	1	0	4	27
Maryland:											
Baltimore	3	1	0	53	14	6	0	14	0	95	182
Cumberland	0		0	0	0	0	0	0	0	0	10
Frederick	0		0	0	0	0	0	0	0	0	3
District of Columbia:											
Washington	2	1	0	38	8	5	0	14	2	33	145
Virginia:											
Lynchburg	1	0		0	0	0	0	0	1	1	4
Richmond	0		0	0	1	0	0	1	1	5	41
Roanoke	0		0	1	0	1	0	0	0	0	8
West Virginia:											
Charleston	0		0	0	0	0	0	0	0	0	18
Huntington	0		0	0		1	0	1	1	0	
Wheeling	0		0	1	2	0	0	1	0	4	13
North Carolina:											
Gastonia	0		0	0	0	0	0	0	0	0	
Raleigh	0		0	0	2	0	0	2	0	0	19
Wilmington	0		0	0	0	0	0	1	0	2	8
Winston-Salem	0		0	0	1	0	0	2	0	0	21
South Carolina:											
Charleston	0		0	0	0	0	0	3	1	0	19
Columbia											
Florence	0		0	0	0	0	0	0	0	0	8
Greenville	2		0	1	2	0	0	0	0	0	6
Georgia:											
Atlanta	1	1	0	1	3	0	0	5	1	0	71
Brunswick	0		0	0	0	0	0	0	0	0	4
Savannah	3		0	0	0	0	0	2	0	0	33
Florida:											
Miami	0	1	0	0	0	1	0	2	0	4	24
Tampa	0		0	0	1	0	0	1	0	0	20
Kentucky:											
Ashland	0		0	1	0	0	0	0	3	0	0
Covington	0		0	2	0	1	0	1	0	0	19
Lexington	0		0	0	1	0	0	1	0	0	18
Louisville	1		0	0	3	5	0	4	0	1	77
Tennessee:											
Knoxville	0		1	0	2	1	0	1	0	0	38
Memphis	2		0	0	4	0	0	11	0	13	82
Nashville	1		0	0	6	0	0	1	3	0	49
Alabama:											
Birmingham	1		0	0	5	0	0	3	0	0	62
Mobile	0		0	0	1	1	0	0	0	0	13
Montgomery	0			0		0	0		0	0	
Arkansas:											
Fort Smith	0			0		0	0		0	0	
Little Rock	0		0	0	2	0	0	2	0	0	4
Louisiana:											
Lake Charles	0		0	0	0	0	0	0	0	0	6
New Orleans	4	1	0	4	6	2	0	15	3	17	152
Shreveport	1		0	0	3	0	0	1	0	0	51
Oklahoma:											
Tulsa	0			0		0	0		0	0	

City reports for week ended July 25, 1936—Continued

State and city	Diphtheria cases	Influenza		Measles cases	Pneumonia deaths	Scarlet fever cases	Smallpox cases	Tuberculosis deaths	Typhoid fever cases	Whooping cough cases	Deaths, all causes
		Cases	Deaths								
Texas:											
Dallas.....	4	1	1	2	3	3	0	2	1	0	85
Fort Worth.....	0		0	5	1	0	0	0	0	4	41
Galveston.....	0		0	0	1	1	0	2	0	0	16
Houston.....	1		0	0	5	2	0	4	6	0	66
San Antonio.....	0		0	1	1	0	0	5	0	0	49
Montana:											
Billings.....	0		0	0	0	1	0	0	0	1	5
Great Falls.....	0		0	0	0	0	0	0	0	1	5
Helena.....	0		0	1	0	1	0	0	0	0	4
Missoula.....	0		0	0	1	0	0	0	0	0	13
Idaho:											
Boise.....	0		0	0	0	0	0	0	0	0	8
Colorado:											
Colorado Springs.....	0		0	0	0	2	0	1	0	0	5
Denver.....	1		0	1	2	3	0	3	2	43	84
Pueblo.....	0		0	0	1	1	0	0	0	0	11
New Mexico:											
Albuquerque.....	0		0	5	0	1	0	3	0	4	16
Utah:											
Salt Lake City.....	0		0	4	2	4	0	0	0	5	23
Nevada:											
Reno.....											
Washington:											
Seattle.....	0		1	16	0	0	0	4	0	4	80
Spokane.....	0		0	2	1	2	1	0	0	14	27
Tacoma.....	0		0	1	0	0	0	1	1	0	29
Oregon:											
Portland.....	0		0	0	1	4	0	2	3	4	77
Salem.....	0			1		2	0		0	2	
California:											
Los Angeles.....	14	5	0	24	19	7	0	24	2	65	331
Sacramento.....	0		0	0	1	6	0	4	0	29	26
San Francisco.....	1		0	16	5	8	0	7	0	3	141

State and city	Meningococcus meningitis		Polio-myelitis cases	State and city	Meningococcus meningitis		Polio-myelitis cases
	Cases	Deaths			Cases	Deaths	
Massachusetts:				Georgia:			
Boston.....	1	3	0	Savannah.....	0	0	1
New York:				Florida:			
New York.....	6	4	2	Miami.....	1	0	0
Syracuse.....	0	0	1	Kentucky:			
Pennsylvania:				Louisville.....	2	2	0
Philadelphia.....	2	1	0	Tennessee:			
Ohio:				Knoxville.....	0	0	2
Cincinnati.....	0	0	1	Nashville.....	0	0	2
Indiana:				Alabama:			
Indianapolis.....	1	0	0	Birmingham.....	0	0	5
Illinois:				Louisiana:			
Chicago.....	2	2	2	New Orleans.....	0	1	0
Springfield.....	0	1	0	Shreveport.....	0	2	0
Michigan:				Oklahoma:			
Detroit.....	0	0	2	Tulsa.....	1	0	0
Missouri:				Texas:			
St. Louis.....	1	0	2	Houston.....	0	0	1
Maryland:				Washington:			
Baltimore.....	5	0	0	Seattle.....	1	0	0
Dist. of Columbia:				Oregon:			
Washington.....	1	0	0	Portland.....	0	0	1
South Carolina:				California:			
Greenville.....	1	0	0	Los Angeles.....	4	2	9
				San Francisco.....	1	0	0

Epidemic encephalitis.—Cases: New York, 2; Philadelphia, 2; Cleveland, 1; St. Louis, 1.
Pollagra.—Cases: Charleston, S. C., 1; Savannah, 6; Miami, 2; Birmingham, 1; Mobile, 1; New Orleans 1; Los Angeles, 1; San Francisco, 2.
Robies (human).—Deaths: Chicago, 1.
Typhus fever.—Cases: Savannah, 5.

FOREIGN AND INSULAR

ITALY

Communicable diseases—4 weeks ended May 24, 1936.—During the 4 weeks ended May 24, 1936, cases of certain communicable diseases were reported in Italy as follows:

Disease	Apr. 27-May 3		May 4-10		May 11-17		May 18-24	
	Cases	Com-munes affected	Cases	Com-munes affected	Cases	Com-munes affected	Cases	Com-munes affected
Anthrax.....	10	10	9	9	13	12	15	14
Cerebrospinal meningitis.....	20	17	24	22	18	17	23	19
Chicken pox.....	346	133	394	160	380	153	402	153
Diphtheria and croup.....	384	209	378	208	363	210	383	227
Dysentery.....	3	3	5	5	10	5	4	4
Hookworm disease.....	17	8	10	7	19	7	20	11
Lethargic encephalitis.....	5	5	4	4	3	3	3	2
Measles.....	1,749	343	2,161	349	2,513	374	2,379	364
Mumps.....	280	117	346	90	334	104	351	126
Paratyphoid fever.....	37	30	38	26	43	35	26	20
Poliomyelitis.....	29	24	30	21	46	34	36	27
Puerperal fever.....	28	26	28	28	29	27	18	18
Rabies.....					1	1		
Scarlet fever.....	237	117	253	125	254	120	303	128
Typhoid fever.....	224	140	251	150	273	161	280	150
Undulant fever.....	95	67	92	70	100	66	109	79
Whooping cough.....	723	195	1,030	210	690	174	624	171

CHOLERA, PLAGUE, SMALLPOX, TYPHUS FEVER, AND YELLOW FEVER

NOTE.—A table giving current information of the world prevalence of quarantinable diseases appeared in the PUBLIC HEALTH REPORTS for July 31, 1936, pages 1053-1067. A similar cumulative table will appear in the PUBLIC HEALTH REPORTS to be issued August 28, 1936, and thereafter, at least for the time being, in the issue published on the last Friday of each month.

Cholera

India.—Cholera has been reported in India as follows: During the week ended June 27, 1936, eight cases were reported at Karikal Territory, and on July 29, 1936, three cases were reported at Sind State, India.

Plague

Hawaii Territory—Island of Hawaii—Hamakua District—Paauhau Sector.—One rat found July 22, 1936, and one found July 27, 1936, both in Paauhau Sector, Hamakua District, Island of Hawaii, Hawaii Territory, have been proved plague infected.

United States.—A report of rodent plague in California and Utah appears on page 1138 of this issue of PUBLIC HEALTH REPORTS.

Typhus Fever

Irish Free State—Galway County—Oughterard—Poulywerrin.—During the week ended July 18, 1936, one case of typhus fever was reported at Poulywerrin, Oughterard, Galway County, Irish Free State.

Yellow Fever

Bolivia—La Paz Department—Suapi.—During the month of June 1936, two cases of yellow fever were reported at Suapi, La Paz Department, Bolivia.

Brazil—Sao Paulo State—Guayra.—On June 26, 1936, one fatal case of yellow fever was reported at Guayra, Sao Paulo State, Brazil.